MODERN BUDGETING
FOR PROFIT PLANNING & CONTROL

Delta Publishing Company

MODERN BUDGETING FOR PLANNING & CONTROL

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CHAPTER 1
THE WHAT AND WHY OF BUDGETING

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define what a budget is
- List and define the types of budgets
- Explain the steps involved in the budgetary process
- Distinguish between the bottom-up and top-down approaches to budgeting
- Describe how to coordinate departmental budget activities
- Explain actual costs versus budget costs
- Identify the advantages and disadvantages of budgets

A budget is defined as the formal expression of plans, goals, and objectives of management that covers all aspects of operations for a designated time period. The budget is a tool providing targets and direction. Budgets provide control over the immediate environment, help to master the financial aspects of the job and department, and solve problems *before* they occur. Budgets focus on the importance of evaluating alternative actions before decisions are actually implemented.

A budget is a financial plan to control *future* operations and results. It is expressed in numbers such as dollars, units, pounds, hours, manpower, and so on. It is needed to effectively and efficiently operate. Budgeting, when used effectively, is a technique resulting in systematic, productive management. Budgeting facilitates control and communication and also provides motivation to employees.

Budgeting allocates funds to achieve desired outcomes. A budget may span any period of time. It may be short-term (one year or less which is usually the case), intermediate-term (two to three years), or long-term (three years or more). Short-term budgets provide greater detail and specifics. Intermediate budgets examine the projects the company is currently undertaking and start the programs necessary to achieve long-term objectives. Long-term plans are very broad and may be translated into short-term plans. The budget period varies according to its objectives, use, and the dependability of the data used to prepare it. The budget period is contingent upon business risk, sales and operating stability, production methods, and length of the processing cycle.

There is a definite relationship between long-range planning and short-term business plans. The ability to meet near-term budget goals will move the business in the direction of accomplishing long-term objectives. Budgeting is done for the company as a whole, as well as for its component segments including divisions, departments, products, projects, services, man-power, and geographic areas. Budgets aid decision-making, measurement, and coordination of the efforts of the various groups within the entity. The interaction of each business segment to the whole organization is highlighted. For example, budgets are prepared for units within a

department, such as product lines, the department itself, the division which consists of a number of departments, and the company.

Master (comprehensive) budgeting is a complete expression of the planning operations of the company for a specific period. It is involved with both manufacturing and nonmanufacturing activities. Budgets should set priorities within the organization. It may be in the form of a plan, project, or strategy. Budgets consider external factors such as market trends, economic conditions, etc. The budget should list assumptions, targeted objectives, and agenda before number crunching begins.

The first step is to determine the overall or strategic goals and strategies of the business which are then translated into specific long-term goals, annual budgets, and operating plans. Corporate goals include earnings growth, cost minimization, sales, production volume, return on investment and product or service quality. The budget requires the analysis and study of historical information, current trends, and industry norms. Budgets may be prepared of expected revenue, costs, profits, cash flow, production purchases, net worth, and so on. Budgets should be prepared for all major areas of the business.

The techniques and details of preparing, reviewing, and approving budgets varies among companies. The process should be tailored to each entity's individual needs. Five important areas in budgeting are planning, coordinating, directing, analyzing, and controlling. The longer the budgeting period, the less reliable are the estimates.

The purpose of budgets is to furnish the link between nonfinancial plans and controls which constitute daily managerial operations and the corresponding plans and controls designed to accomplish satisfactory earnings and financial position.

Effective budgeting requires the existence of the following:

- Predictive ability
- Clear channels of communication, authority, and responsibility
- Accounting-generated accurate, reliable, and timely information
- Compatibility and understandability of information
- Support at all levels of the organization from upper, middle, and lower.

The budget should be reviewed by a group so that there is a broad knowledge base. Budget figures should be honest to assure trust between the parties. At the corporate level, the budget examines sales and production to estimate corporate earnings and cash flow. At the department level, the budget examines the effect of work output on costs. A departmental budget shows resources available, when and how they will be used, and expected accomplishments.

Budgets are useful tools in allocating resources (e.g., machinery, employees), making staff changes, scheduling production, and operating the business. Budgets help keep expenditures within defined limits. Consideration should be given to alterative methods of operations.

Budgets are by departments and responsibility centers. They should reflect the goals and objectives of each department through all levels of the organization. Budgeting aids all

departmental areas including management, marketing, personnel, engineering, production, distribution, and facilities.

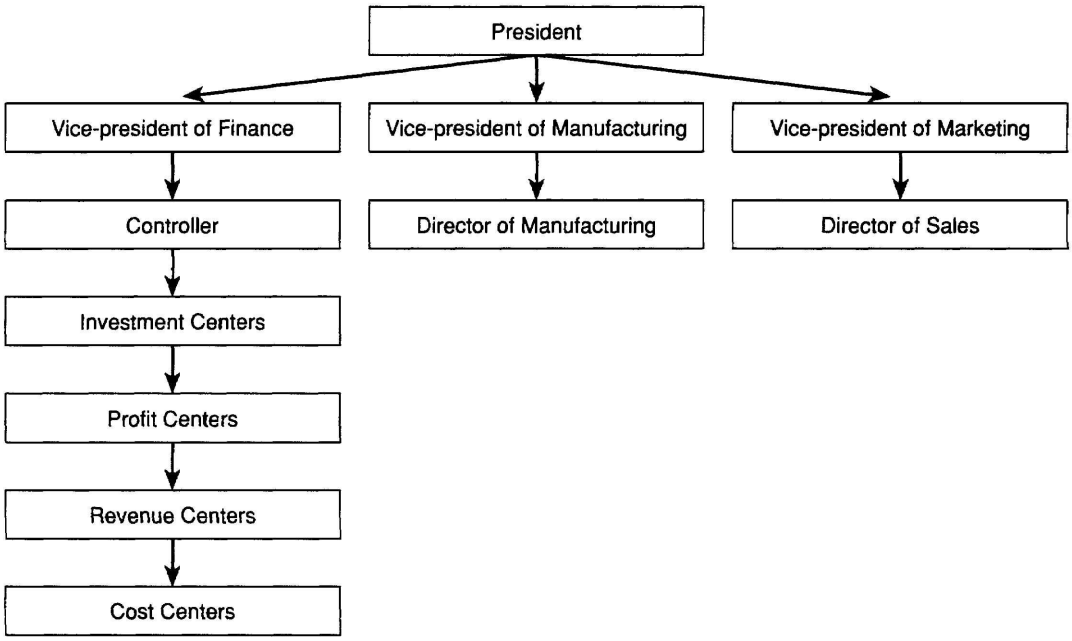
In budgeting, consideration should be given to the company's manpower and production scheduling, labor relations, pricing, resources, new product introduction and development, raw material cycles, technological trends, inventory levels, turnover rate, product or service obsolescence, reliability of input data, stability of market or industry, seasonality, financing needs, and marketing and advertising. Consideration should also be given to the economy, politics, competition, changing consumer base and taste, and market share.

Budgets should be understandable and attainable. Flexibility and innovation is needed to allow for unexpected contingencies. Flexibility is aided by variable budgets, supplemental budgets, authorized variances, and review and revision. Budgets should be computerized to aid "what-if" analysis. Budgeting enhances flexibility through the planning process because alternative courses of action are considered in advance rather than forcing less-informed decisions to be made on the spot. As one factor changes, other factors within the budget will also change. Internal factors are controllable by the company whereas external factors are usually uncontrollable. Internal factors include risk and product innovation.

Forecasting is *predicting* the outcome of events. It is an essential starting point for budgeting. Budgeting is *planning* for a result and controlling to accomplish that result. Budgeting is a tool and its success depends upon the effectiveness to which it is used by staff. In a recessionary environment, proper budgeting can increase the survival rate. A company may fail from sloppy or incomplete budgeting. Exhibit 1 shows a graphic depiction of budget segments.

EXHIBIT 1

BUDGET SEGMENTS



We now consider planning, types of budgets, the budgetary process, budget coordination, departmental budgeting, comparing actual to budgeted figures, budget revision and weaknesses, control and audit, participative budgeting, and the pros and the cons of budgets.

PLANNING

Budgeting is a planning and control system. It communicates to all members of the organization what is expected of them. Planning is determining the activities to be accomplished to achieve objectives and goals. Planning is needed so that a company can operate its departments and segments successfully within. It looks at what should be done, how it should be done, when it should be done, and by whom. Planning involves the determination of objectives, evaluating alternative courses of action, and authorization to select programs. There should be a good interface of segments within the organization.

Budgets are blueprints for projected action and a formalization of the planning process. Plans are expressed in quantitative and monetary terms. Planning is taking an action based upon investigation, analysis, and research. Potential problems are searched out. Budgeting induces planning in each phase of the company's operation.

A profit plan is what a company expects to follow to attain a profit goal. Managers should be discouraged from spending their entire budget. Managers should be given credit for their cost savings.

Budget planning meetings should be held routinely to discuss such topics as the number of staff needed, objectives, resources, and time schedules. There should be clear communication of how the numbers are established and why, what assumptions were made, and what the objectives are.

TYPES OF BUDGETS

It is necessary to be familiar with the various types of budgets to understand the whole picture and how these budgets interrelate. The types of budgets include master, operating (for income statement items comprised of revenue and expenses), financial (for balance sheet items), cash, sales, production, cost, static (fixed), flexible (variable), direct material, direct labor, overhead, capital expenditure (facilities), and program (appropriations for specific activities such as research and development, and advertising).

Master Budget
A master budget is an overall financial and operating plan for a forthcoming calendar or fiscal year. It is usually prepared annually or quarterly. The master budget is really a number of sub-budgets tied together to summarize the planned activities of the business. The format of the master budget depends upon the size and nature of the business.

Static (Fixed) Budget
The static (fixed) budget is budgeted figures at the expected capacity level. Allowances are set forth for specific purposes with monetary limitations. It is used when a company is relatively stable. Stability usually refers to sales. The problem with a static budget is the absence of flexibility to adjust to unpredictable changes.

In industry, fixed budgets are appropriate for those departments whose work load does not have a direct current relationship to sales, production, or some other volume determinant related to the department's operations. The work of the departments is determined by management decision rather than by sales volume. Most administrative, general marketing, and even manufacturing management departments are in this category. Fixed appropriations for specific projects or programs not necessarily completed in the fiscal period also become fixed budgets to the extent that they will be expended during the year. Examples are appropriations for capital expenditures, major repair projects, and specific advertising or promotional programs.

Flexible (Expense) Budget
The flexible (expense) budget is most commonly used by companies. It allows for variability in the business and for unexpected changes. It is dynamic in nature rather than static. Flexible budgets adjust budget allowances to the actual activity. Flexible budgets are effective when volumes vary within a relative narrow range. They are easy to prepare with computerized spread-sheets such as Excel.

The basic steps in preparing a flexible (expense) budget are:

1. Determine the relevant range over which activity is expected to fluctuate during the coming period.
2. Analyze costs that will be incurred over the relevant range in terms of determining cost behavior patterns (variable, fixed, or mixed).
3. Separate costs by behavior, determining the formula for variable and mixed costs.
4. Using the formula for the variable portion of the costs, prepare a budget showing what costs will be incurred at various points throughout the relevant range.

Due to uncertainties inherent in planning, three forecasts may be projected: one at an optimistic level, one at a pessimistic or extremely conservative level, and one at a balanced, in-between level.

Operating and Financial Budgets
The operating budget deals with the costs for merchandise or services produced. The financial budget examines the expected assets, liabilities, and stockholders' equity of the business. It is needed to see the company's financial health.

Cash Budget
The cash budget is for cash planning and control. It presents expected cash inflow and outflow for a designated time period. The cash budget helps management keep cash balances in reasonable relationship to its needs and aids in avoiding idle cash and possible cash shortages. The cash budget typically consists of four major sections:

1. receipts section, which is the beginning cash balance, cash collections from customers, and other receipts,
2. disbursement section comprised of all cash payments made by purpose,
3. cash surplus or deficit section showing the difference between cash receipts and cash payments, and
4. financing section providing a detailed account of the borrowings and repayments expected during the period.

Capital Expenditure Budget
The capital expenditure budget is a listing of important long-term projects to be undertaken and capital (fixed assets such as plant and equipment) to be acquired. The estimated cost of the project and the timing of the capital expenditures are enumerated along with how the capital assets are to be financed. The budgeting period is typically for three to ten years. There may be a capital projects committee solely created for this purpose, which is typically separate from the budget committee.

The capital expenditures budget often classifies individual projects by objective such as with the following:

- Expansion and enhancement of existing product lines
- Cost reduction and replacement
- Development of new products
- Health and safety expenditures.

The lack of funds may prevent attractive potential projects from being approved.

An approval of a capital project typically means approval of the project in principle. However, final approval is not automatic. To obtain final approval, a special authorization request is prepared for the project, spelling out the proposal in more detail. The authorization requests may be approved at various managerial levels depending upon their nature and dollar magnitude.

Program Budget
Programming is deciding on the programs to be funded and by how much. A common application of program budgets is to product lines. There is an allocation of resources to accomplish a specific objective with a review of existing and new programs. Some suitable program activities include research and development, marketing, training, preventive maintenance, engineering, and public relations. Funds are usually allocated based on cost effectiveness. In budget negotiations, proposed budgetary figures should be explained and justified. The program budget typically cannot be used for control purposes because the costs shown cannot ordinarily be related to the responsibilities of specific individuals.

Incremental Budget
Incremental budgeting looks at the increase in the budget in terms of dollars or percentages without considering the whole accumulated body of the budget.

There are also self-contained, self-justified increments of projects. Each one specifies resource utilization and expected benefits. A project may be segregated into one or more increments. There are additional increments to complete the project. Manpower and resources are assigned to each increment.

Add-On Budget
An add-on budget is one in which previous years' budgets are examined and adjusted for current information such as inflation and employee raises. Money is added to the budget to satisfy the new requirements. With add-on, there is no incentive for efficiency, but competition forces one to look for new, better ways of doing things. For example, Konica Imaging U.S.A. has combined add-on with zero-based review.

Supplemental Budget
Supplemental budgets provide additional funding for an area not included in the regular budget.

Bracket Budget
A bracket budget is a contingency plan where costs are projected at higher and lower levels than the base amount. Sales are then forecasted for these levels. The purpose of this is that if the base budget and the resulting sales forecast is not achieved, the bracket budget provides management with a sense of earnings impact and a contingency expense plan. A contingency budget may be appropriate when there are downside risks that should be planned for such as a sharp drop in revenue.

Stretch Budget
A stretch budget may be considered a contingency budget on the optimistic side. It is typically only confined to sales and marketing projections that are higher than estimates. It is rarely applied to expenses. Stretch targets may be held informally without making operating units accountable for them. Alternatively, stretch targets may be official estimates for sales/marketing personnel. Expenses may be estimated at the standard budget sales target.

Strategic Budget
Strategic budgeting integrates strategic planning and budgeting control. It is effective under conditions of uncertainty and instability.

Activity-Based Budget
Activity-based budgeting budgets costs for individual activities

Target Budget
A target budget is a plan in which categories of *major expenditures* are matched to *company goals.* The emphasis is on formulating methods of project funding to move the company forward. There must be strict justification for large dollars and special project requests.

Continuous Budget
A continuous (rolling) budget is one that is revised on a regular (continuous) basis. Typically, a company extends such a budget for another month or quarter in accordance with new data as the current month or quarter ends. For example, if the budget is for 12 months, a budget for the next 12 months will be available continuously as each month ends.

THE BUDGETARY PROCESS

A sound budget process communicates organizational goals, allocates resources, provides feedback, and motivates employees. The budgetary process should be standardized by using budget manuals, budget forms, and formal procedures. Software, Program Evaluation and Review Technique (PERT), and Gantt facilitate the budgeting process and preparation. The timetable for the budget must be kept. If the budget is a "rush job," unrealistic targets may be set.

The budget process used by a company should suit its needs, be consistent with its organizational structure, and take into account human resources. The budgetary process establishes goals and policies, formulates limits, enumerates resource needs, examines specific requirements, provides flexibility, incorporates assumptions, and considers constraints. The budgeting process should take into account a careful analysis of the current status of the company. The process takes longer as the complexity of the operations increase. A budget is based on past experience plus a change in light of the current environment.

The steps in the budgeting process are:

1. Setting objectives.
2. Analyzing available resources.
3. Negotiating to estimate budget components.
4. Coordinating and reviewing components.
5. Obtaining final approval.
6. Distributing the approved budget.

A budget committee should review budget estimates from each segment, make recommendations, revise budgeted figures as needed, and approve or disapprove of the budget. The committee should be available for advice if a problem arises in gathering financial data. The committee can also reconcile diverse interests of budget preparers and users.

The success of the budgeting process requires the cooperation of all levels within the organization. For example, without top management or operating management support, the

budget will fail. Those involved in budgeting must be properly trained and guided in the objectives, benefits, steps, and procedures. There should be adequate supervision.

The preparation of a comprehensive budget usually begins with the anticipated volume of sales or services, which is a crucial factor that determines the level of activity for a period. In other cases, factory capacity, the supply of labor, or the availability of raw materials could be the limiting factor to sales. After sales are forecast, production costs and operating expenses can be estimated. The budgeting period varies with the type of business, but it should be long enough to include complete cycles of season, production, inventory turnover, and financial activities. Other considerations are product or service to be rendered and regulatory requirements.

The budget guidelines prepared by top management are passed down through successive levels in the company. Managers at each level may make additions and provide greater detail for subordinates. The managers at each level prepare the plans for items under their control. For example, Philip Morris formulates departmental budgets for each functional area.

The budgeting process will forewarn management of possible problems that may arise. By knowing the problems, solutions may be formulated. For example, at the valleys in cash flow, a shortage of cash may occur. By knowing this in advance, management may arrange for a short-term loan for the financing need rather than face a sudden financing crisis. In a similar vein, planning allows for a smooth manufacturing schedule to result in both lower production costs and lower inventory levels. It avoids a crisis situation requiring overtime or high transportation charges to receive supplies ordered on a "rush basis." Without proper planning cyclical product demand needs may arise straining resources and capacity. Resources include material, labor, and storage.

Bottom-Up vs. Top-Down

A budget plans for future business actions. Managers prefer a participative bottom-up approach to an authoritative top-down approach. The bottom-up method begins at the bottom or operating (departmental) level based on the objectives of the segment. However, operating levels must satisfy the overall company goals. There are estimates of component activities such as product line by department. Each department prepares its own budget before it is integrated into the master budget.

Managers are more motivated to achieve budgeted goals when they are involved in budget preparation. A broad level of participation usually leads to greater support for the budget and the entity as a whole, as well as greater understanding of what is to be accomplished. Advantages of a participative budget include greater accuracy of budget estimates. Managers with immediate operational responsibility for activities have a better understanding of what results can be achieved and at what costs. Also, mangers cannot blame unrealistic goals as and excuse for not achieving budget expectations when they have helped to establish those goals. Despite the involvement of lower-level managers, top management must still participate in the budget process to insure that the combined goals of the various departments are consistent with profitability objectives of the company.

The goals may include growth rates, manpower needs, minimum return on investment, and pricing. In effect, departmental budgets are used to determine the organizational budget. The

budget is reviewed, adjusted if necessary, and approved at each higher level. The bottom-up approach would forecast sales by product or other category, then by company sales, and then by market share. The bottom-up method may be used to increase the feeling of unit-level ownership in the budget. Disadvantages are the time-consuming process from participative input, and the fact that some company objectives may be neglected by operating units. Bottom-up does not allow for control of the process, and the resulting budget is likely to be unbalanced with regard to the relationship of expenses to revenue.

Typical questions to answer when preparing a bottom-up budget are:
What are the expected promotional and travel expenses for the coming period? What staff requirements will be needed? What are the expected raises for the coming year? How much supplies will be needed?

This approach is particularly necessary when responsibility unit managers are expected to be very innovative. Unit managers know what must be achieved, where the opportunities are, what problem areas must be resolved, and where resources must be allocated.

In the top-down approach, a central corporate staff under the CEO or President determines overall company objectives and strategies, enumerates resource constraints, considers competition, prepares the budget, and makes allocations. Management considers the competitive and economic environment. Top management knows the company's objectives, strategies, resources, strengths, and weaknesses. Departmental objectives follow from the action plans.

Top-down is commonly used in long-range planning. A top-down approach is needed for a company having significant interdependence among operating units to enhance coordination. The top-down approach would forecast first sales based on an examination of the economy, then the company's share of the market and the company's sales, and then would proceed to a forecast of sales by products or other category. A top-down approach may be needed when business unit managers must be given specific performance objectives due to a crisis situation, and when close coordination is required between business units. It is possible that the sum of the unit budgets would not meet corporate expectations. If unit managers develop budgets independently of other units, there are inconsistencies in the assumptions used by different units.

A disadvantage with this approach is that central staff may not have all the knowledge needed to prepare the budget within every segment of the organization. Managers at the operating levels are more knowledgeable and familiar with the segment's operations. Managers will not support or commit to a budget they were not involved in preparing, which will cause a motivational problem. Further, the top-down approach stifles creativity. A budget needs input from affected managers but top management knows the overall picture.

A combination of the bottom-up and top-down approaches may be appropriate in certain cases. Some large companies may use an integration of the methods. For example, Konica Imaging uses a method when it best fits. The company uses a blend. There is direction supplied from the top and action plans developed by senior management. Each department must then determine how it will actually implement the action, specifically looking at the resources and expenditures required. This is the quantification of the action plans into dollars. It is then reviewed to see if it achieves the desired results. If it does not, it will be kicked back until it is

brought in line with the desired outcomes. The what, why, and when is specified from the top, and the how and who is specified from the bottom.

As an example of the budgeting process, Power Cord and Cable Corporation (PCCC) uses a comprehensive or master budget to summarize the objective of all its subunits such as Sales, Production, Marketing, Administrative, Purchasing and Finance. Just as all organizations, PCCC uses a master budget as a blue print for planned operations in a particular time period.

BUDGET COORDINATION

There should be one person responsible for centralized control over the budget who must work closely with general management and department heads. A budget is a quantitative plan of action that aids in coordination and implementation. The budget communicates objectives to all the departments within the company. A budget is a tool of top management to coordinate corporate activities to subordinate departments with each other. The budget presents upper management with coordinated and summarized data as to the financial ramifications of plans and actions of various departments and units within the company.

Budgets are usually established for all departments and major segments in the company. The budget must be comprehensive including all inter-related departments. The budget process should receive input from all departments so there is coordination within the firm. For example, operations will improve when marketing, purchasing, personnel, and finance departments cooperate.

Coordination is obtaining and organizing the needed personnel, equipment, and materials to carry out the business. A budget aids in coordination between separate activity units to ensure that all parts of the company are in balance with each other and know how they fit in. It discloses weaknesses in the organizational structure. The budget communicates to staff what is expected of them. It allows for a consensus of ideas, strategies, and direction.

The interdependencies between departments and activities must be considered. For example, the sales manager depends on sufficient units produced in the production department. Production depends on how many units can be sold. Most budget components are affected by other components. For example, most components are impacted by expected sales volume and inventory levels, while purchases are based on expected production and raw material inventories.

A budget allows for directing and control. Directing is supervising the activities to assure they are carried out in an effective and efficient manner within time and cost constraints. Controlling is measuring the progress of resources and personnel to accomplish a desired objective. A comparison is made between actual results and budgeting estimates to identify problems needing attention.

In summation, the budget must consider the requirements of each department or function, and the relationship that departments or functions have with other departments and functions. Activities and resources have to be coordinated.

DEPARTMENTAL BUDGETING

All department managers within a company must accurately determine their future costs and must plan activities to accomplish corporate objectives. Departmental supervisors must have a significant input into budgeting costs and revenues since they are directly involved with the activity and have the best knowledge of it. Managers must examine whether their budgetary assumptions and estimates are reasonable. Budget targets should match manager responsibilities. At the departmental level, the budget considers the expected work output and translates it into estimated future costs.

Budgets are needed for each department. The sales department must forecast future sales volume of each product or service as well as the selling price. It will probably budget revenue by sales territory and customer. It will also budget costs such as wages, promotion and entertainment, and travel. The production department must estimate future costs to produce the product or service and the cost per unit. The production manager may have to budget work during the manufacturing activity so the work flow continues smoothly. The purchasing department will budget units and dollar purchases. There may be a breakdown by supplier. There will be a cost budget for salaries, supplies, rent, and so on. The stores department will budget its costs for holding inventory. There may be a breakdown of products into categories. The finance department must estimate how much money will be received and where it will be spent to determine cash adequacy. An illustrative budget showing revenue and expense by product line appears in Exhibit 2

ACTUAL COSTS VS. BUDGET COSTS

A budget provides an "early warning" of impending problems. The effectiveness of a budget depends on how sound and accurate the estimates are. The planning must take all factors into account in a realistic way. The budget figures may be inaccurate because of such factors as economic problems, political unrest, competitive shifts in the industry, introduction of new products, and regulatory changes.

At the beginning of the period, the budget is a plan. At the end of the period, the budget is a control instrument to assist management in measuring its performance against plan so as to improve future performance. Budgeted revenue and costs are compared to actual revenue and costs to determine variances. A determination has to be made whether the variances are controllable or uncontrollable. If controllable, the parties responsible must be identified. Corrective action must be taken to correct any problems.

EXHIBIT 2
STATEMENT OF REVENUE AND EXPENSE BY PRODUCT
FOR THE YEAR ENDED 20X2

Description	All Products		Product Line					
	Amount	Percentage of Net sales	X Amount	Percentage of Net sales	Y Amount	Percentage of Net sales	Z Amount	Percentage of Net Sales
Gross revenue								
Less: Sales returns and allowances								
Net revenue								
Less: Variable cost of sales								
Manufacturing contribution margin								
Direct distribution costs								
Variable								
Fixed								
Semi-direct distribution								
Variable costs								
Contribution margin								
Continuing costs								
Fixed overhead								
Other indirect costs								
Total								
Income before taxes								
Less: Taxes								
Net income								

A comparison should be made between actual costs at actual activity to budgeted costs at actual activity. In this way, there is a common base of comparison. The percentage and dollar difference between the budget and actual figures should be shown. A typical performance report for a division appears in Exhibit 3

EXHIBIT 3
XYZ COMPANY
DIVISIONAL PERFORMANCE EVALUATION
DECEMBER 31, 20X2

Division	Net Sales Actual	Net Sales Expected	Over (Under) Plan	Net Income Actual	Net Income Expected	Over (Under) Plan
A	$2000	$4000	$(2000)	$1000	$800	$200
B	3000	5000	(2000)	700	600	100
C	5000	6000	(1000)	600	1000	(400)
Total	$10,000	$15,000	($5,000)	$2,300	$2,400	$(100)

Authorized variances in cost budgets allow for an increase in the initial budget for unfavorable variances. This may result from unexpected wage increases, prices of raw materials, and so on. Allowance is given for cost excesses that a manager can justify.

BUDGET REVISION

A budget should be regularly monitored. A budget should be revised to make it accurate during the period because of error, feedback, new data, changing conditions (e.g., economic, political, corporate), or modification of the company's plan. Human error is more likely when the budget is large and complex. A change in conditions will typically affect the sales forecast and resulting

cost estimates. Revisions are more common in volatile industries. The budget revision applies to the remainder of the accounting period.

A company may “roll a budget” which is continuous budgeting for an additional incremental period at the end of the reporting period. The new period is added to the remaining periods to form the new budget. Continuous budgets reinforce constant planning, consider past information, and take into account emerging conditions.

BUDGET WEAKNESSES

The signs of budget weaknesses must be spotted so that corrective action may be taken. Such signs include:

- Managerial goals are off target or unrealistic.
- There is management indecisiveness.
- The budget takes too long to prepare.
- Budget preparers are unfamiliar with the operations being budgeted and do not seek such information. Budget preparers should visit the actual operations first hand.
- Budget preparers do not keep current.
- The budget is prepared using different methods each year.
- There is a lack of raw information going into the budgeting process.
- There is a lack of communication between those involved in budgeting and operating personnel.
- The budget is formulated without input from those affected by it. This will likely result in budgeting errors. Further, budget preparers do not go into the operations field.
- Managers do not know how their budget allowances have been assigned nor what the components of their charges are. If managers do not understand the information, they will not properly perform their functions.
- The budget document is excessively long, confusing, or filled with unnecessary information. There may be inadequate narrative data to explain the numbers.
- Managers are ignoring their budgets because they appear unusable and unrealistic.
- Managers feel they are not getting anything out of the budget process. There are excessively frequent changes in the budget.
- Significant unfavorable variances are not investigated and corrected. These variances may also not be considered in deriving budgeted figures for next period. Further, a large variance between actual and budgeted figures, either positive or negative, that repeatedly occurs is an indicator of poor budgeting. Perhaps the budgeted figures were unrealistic. Another problem is that after variances are identified, it is too late to correct their causes. Further, variance reporting may be too infrequent.
- There is a mismatching of products or services.

BUDGETARY CONTROL AND AUDIT

As was discussed previously, the budget is a major control device for revenue, costs, and operations. The purpose is to increase profitability and reduce costs, or to meet other corporate objectives as quickly as possible. Budgetary control may also be related to nonfinancial activities such as the life cycle of the product or seasonality. An illustrative budget control report is shown in Exhibit 4.

A budget audit should be undertaken to determine the correctness of the budgeted figures. Was there a proper evaluation of costs? Were all costs included that should have been? What are the cost trends? Are budgeted figures too tight or too loose? Are budgeted figures properly supported by documentation? A budget audit appraises budgeting techniques, procedures, manager attitudes, and effectiveness. The major aspects of the budgeting process have to be examined.

EXHIBIT 4

BUDGET CONTROL REPORT

I. Budget Savings

One-year Savings Amount:
Two- to Five-Year Savings Amount:
More Than Five-Year Savings Amount:
Savings Description:

II. Budget impact
Reduction in Current Year Budget
Budget Account
Budget Amount
Budget Adjustment Not Needed

III. Budget Participants

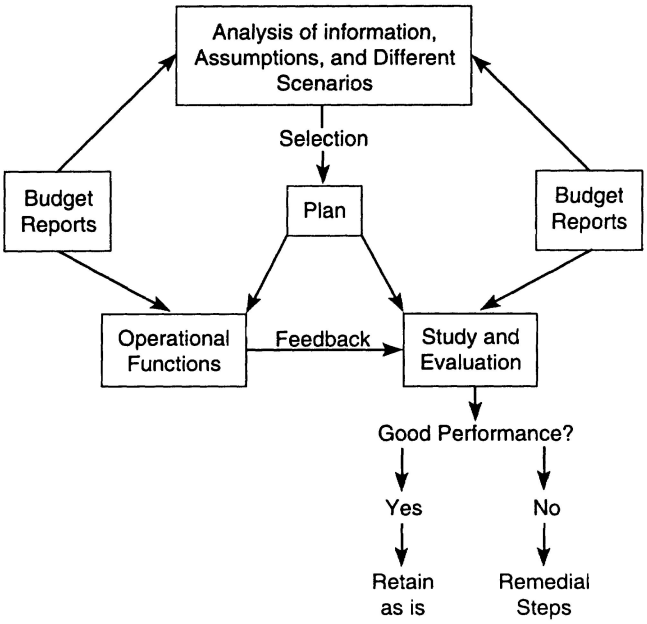
Management:	Names:	Job Description:
Employees:	Names:	Job Description

IV. Management Incentives:

V. Employee Awards
Prepared By:
Reviewed By:
Approved By:

Exhibit 5 depicts the control process in budgeting.

EXHIBIT 5
BUDGETING CONTROL PROCESS



COMPUTER APPLICATIONS

A computer should be used to make quick and accurate calculations, keep track of projects instantly, and make proper comparisons.

With the use of a spreadsheet program, budgeting can be used as an effective tool to evaluate "what-if" scenarios. This way the manager should be able to move toward finding the best course of action among various alternatives through simulation. If the manager does not like the result, he or she may alter the contemplated decision and planning set. There also exist specialized software that is solely devoted to budget preparation and analysis.

MOTIVATION

Budgets can be used to affect employee attitudes and performance. Budgets should be participative including participation by those to be affected by them. Further, lower level employees are on the operating line every day so they are quite knowledgeable. Their input is needed. Budgets can be used to motivate because participants will internalize the budget goals as their own since they participated in their development. Information should be interchanged among budget participants. An imposed budget will have a *negative* effect upon motivation. Further, there is a correlation between task difficulty and loss of control to negative attitudes.

A budget is a motivational and challenging tool if it is tight, but attainable. It has to be *realistic*. If the budget is too tight, it results in frustration because managers will give up and not try to achieve the unrealistic targets. If it is too loose, complacency will arise and workers may "goof off."

The best way to set budget targets is with a probability of achievement by most managers 80 percent-90 percent of the time. Performance above the target level should be supplemented with incentives including bonuses, promotion, and additional responsibility.

ADVANTAGES AND DISADVANTAGES OF BUDGETS

Budgeting involves cost and time to prepare. The benefits of budgeting must outweigh the drawbacks. A budget can be advantageous because it does the following:

- Links objectives and resources.
- Communicates to managers what is expected of them. Any problems in communication and working relationships are identified. Resources and requirements are identified.
- Establishes guidelines in the form of a "road map" to proceed in the right direction.
- Improves managerial decision-making because emphasis is on future events and associated opportunities.
- Encourages delegation of responsibility and enables managers to focus more on the specifics of their plans and how realistic the plans are, and how such plans may be effectively achieved.
- Provides an accurate analytical technique.
- Provides better management of subordinates. For example, a manager can use the budget to encourage salespeople to consider their clientele in long-term strategic terms.
- Fosters careful study before making decisions.
- Helps management become aware of the problems faced by lower levels within the organization. It promotes labor relations.
- Allows for thinking how to make operations and resources more productive, efficient, competitive, and profitable. It leads to cost reduction.
- Allows management to monitor, control, and direct activities within the company. Performance standards act as incentives to perform more effectively.
- Points out deviations between budget and actual resulting in warning signals for changes or alterations.
- Helps identify on a timely basis weaknesses in the organizational structure. There is early notice of dangers or departures from forecasts. The formulation and administration of budgets pinpoints communication weaknesses, assigns responsibility, and improves working relationships.
- Provides management with foresight into potential crisis situations so alternative plans may be instituted.
- Provides early signals of upcoming threats and opportunities.
- Aids coordination between departments to attain efficiency and productivity. There is an interlocking within the business organization. For example the production department will manufacture based upon the sales department's anticipated sales volume. The purchasing department will buy raw materials based on the production department's expected production volume. The personnel department will hire or lay off workers based on anticipated production levels. Executives are forced to consider relationships among individual operations and the company as a whole.
- Provides a motivational devise setting a standard for employees to achieve.
- Measures of self-evaluation.
- Management can make distasteful decisions and "blame it on the budget."

The disadvantages of a budget are:

- A budget promotes “gamesmanship” in that those managers who significantly inflate requests, knowing they will be reduced, are in effect rewarded by getting what they probably wanted already.
- A budget may reward managers who set modest goals and penalize those who set ambitious goals that are missed.
- There is judgment and subjectivity in the budgeting process.
- Managers may consider budgets as redirecting their flexibility to adjust to changing conditions.
- A budget does not consider quality and customer service.

CONCLUSION

A budget should be based on norms and standards. The budget should be coordinated, integrated, organized, systematic, clear, and comprehensive to accomplish optimal results. The budget preparation, review, and evaluation process must be facilitated. An orderly budgeting process will result in less cost, more man-hours, and minimization of conflict and turmoil. It will require less revision at a later date. Input-output relationships must also be considered. The budget aids in anticipating problems before they become critical. Short-term budgets should be used for businesses subject to rapid change. It is a tool for planning and for a “what if” analysis. It aids in identifying the best course of action.

As it is in the computer world—garbage in, garbage out—so it is with budgeting. If forecasts are inaccurate so will be the projections, resulting in bad management decisions to the detriment of the firm. A manager must be cautious when analyzing past experience. Unforeseen circumstances such as economic downturns and future innovations have direct inputs on present operations. A manager deviating from a budget target must explain why and, of course, is on the defensive. Without proper justification, the manager may be dismissed.

The failure to budget may result in conflicting and contradictory plans as well as in wasting corporate resources. Budget slack should be avoided or minimized. Budget slack is the underestimation of revenues and the overestimation of expenses. Budgets should be revised as circumstances materially change. A manager who has responsibility to meet a budget should also have the authorization to use corporate resources to accomplish that budget. There should be priorities established for the allocation of scarce resources. Budgets may include supplementary information such as break-even analysis by department, by product, and for overall operations.

It is important to avoid the situation in which a manager feels he or she must spend the entire budget or else lose funding in the next period. Managers should not be motivated to spend the entire budget. Rather, cost savings should be realized, and those responsible should be recognized such as through cash bonuses or nonmonetary awards (e.g., trophy, medals). Budget savers should be protected in the funding for future budgets.

Budgets should not be arbitrarily cut across-the-board. This may result in disastrous consequences in certain programs. If budget reductions are necessary, determine exactly where and by how much.

CHAPTER 2
STRATEGIC PLANNING AND BUDGETING

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define what is meant by budgeting
- Explain how strategic planning and budgeting are linked together
- Prepare a checklist for a budgeting system
- Distinguish between short-term and long-term plans
- List the types of plans and explain each.

Although planning differs among companies, it is the direction of the company over a period of time to accomplish a desired result. Planning should link short-term, intermediate-term, and long-term goals. The objective is to make the best use of the companies' available resources over the long term. Budgeting is simply one portion of the plan. The annual plan may be based on the long-term plan. The annual budget should be consistent with the long-term goals of the business. There should be a climate conducive to planning and friendly relationships. An objective of planning is to improve profitability. Plans are interrelated.

In planning, management selects long-term and short-term goals and draws up plans to accomplish those goals. Planning is more important in long-run management. The objectives of a plan must be continually appraised in terms of degree of accomplishment and how long it takes to implement. There should be feedback as to the plan's progress. It is best to concentrate on accomplishing fewer targets so proper attention will be given to them. Objectives must be specific and measurable. For example, a target to increase sales by 20 percent is definite and specific. The manager can measure quantitatively the progress toward meeting this target.

The plan is the set of details implementing the strategy. The plan of execution is typically explained in sequential steps including costs and timing for each step. Deadlines are set.

The planning function includes all managerial activities that ultimately enable an organization to achieve its goals. Because every organization needs to set and achieve goals, planning is often called the first function of management. At the highest levels of business, planning involves establishing company strategies, that is, determining how the resources of the business will be used to reach its objective. Planning also involves the establishment of policies, i.e., the day-to-day guidelines used by managers to accomplish their objectives. The elements of a plan include objectives, performance standards, appraisal of performance, action plan, and financial figures.

All management levels should be involved in preparing budgets. There should be a budget for each responsibility center. Responsibility in particular areas should be assigned for planning to specific personnel. At Adolph Coors Company, planning is ongoing, encouraging managers to assume active roles in the organization.

A plan is a predetermined action course. Planning has to consider the organizational structure, taking into account authority and responsibility. Planning is determining what should be done, how it should be done, and when it should be done. The plan should specify the nature of the problems, reasons for them, constraints, contents, characteristics, category, alternative ways of accomplishing objectives, and listing of information required. Planning objectives include quantity and quality of products and services, as well as growth opportunities.

A plan is a detailed outline of activities to meet desired strategies to accomplish goals. Such goals must be realistic. Planning requires analysis of the situation. The plan should specify the evaluative criteria and measurement methods. The assumptions of a plan must be specified and appraised as to whether they are reasonable. The financial effects of alternative strategies should be noted. Planning should allow for creativity. Planning involves analyzing the strengths and weaknesses of the company and each segment therein. Planning is needed of allocating human resources to organizational units and programs.

Long-term plans should consider new opportunities, competition, resources (equipment, machinery, manpower), diversification, expansion, financial strength, and flexibility. In planning, consideration has to be given to noncyclical occurrences, such as new product or service introduction, modification in manufacturing processes, and discontinuance of a product or service. Strategic budgeting is a form of long-range planning based on identifying and specifying organizational goals and objectives. The strengths and weaknesses of the organization are evaluated and risk levels are assessed. The influences of environmental factors are forecast to derive the best strategy for reaching the organization's objectives.

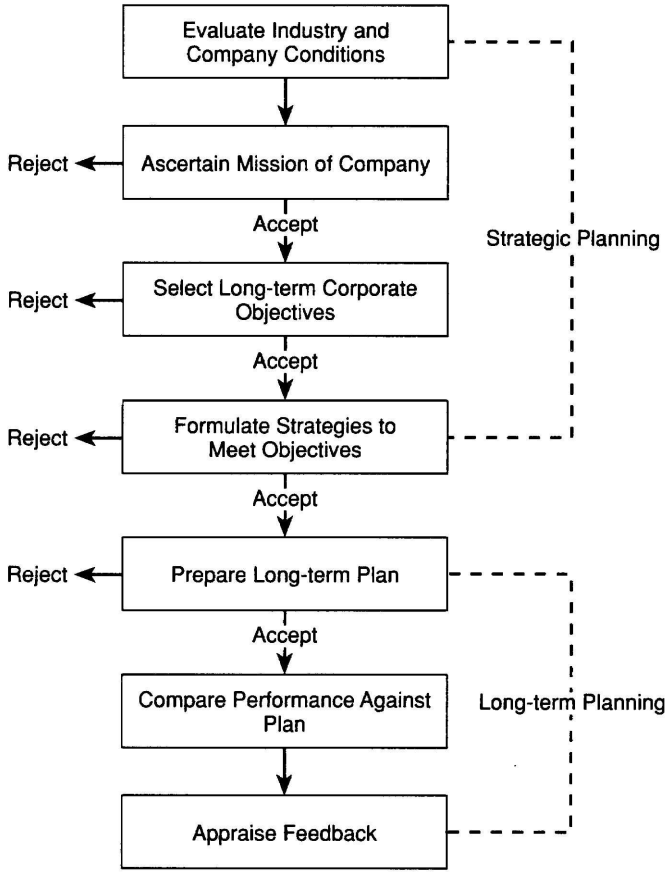
Several planning assumptions should be made at the beginning of the budget process. Some of these assumptions are internal factors; others are external to the company. External factors include general economic conditions and their expected trend, governmental regulatory measures, the labor market in the locale of the company's facilities, and activities of competitors, including the effects of mergers.

Planning is facilitated when the business is stable. For example, a company with a few products or services operating in stable markets can plan better than one with many diverse products operating in volatile markets. Planning should take into account industry and competing company conditions.

A description of products, facilities, resources, and markets should be noted. The emphasis should be on better use of resources including physical facilities and personnel. In summation, a plan is a detailed outline of activities and strategies to satisfy a long-term objective. An objective is a quantifiable target. The objective is derived from an evaluation of the situation. A diagram of the strategic planning process appears in Exhibit 1.

EXHIBIT 1

STRATEGIC PLANNING PROCESS



BUDGETING

Budgeting is a form of planning and policy development considering resource constraints. It is a profit planning mechanism ands may look at "what-if scenarios. Budgets are detailed and communicate to subunits what is expected of them. Budget information should be provided by those responsible for expenditures and revenue. Planning should be by the smallest practical segment. Budgeting is worthwhile if its use makes the company more profitable than without it.

Budgets are quantitative expressions of the yearly profit plan and measure progress during the period. The shorter the budgeting period, the more reliable. A cumulative budget may drop the prior month and add the next month.

Probabilities may be used in budgeting. Of course, the total probabilities must add up to 100%.

EXAMPLE 1

The sales manager assigns the following probabilities to expected sales for the year:

Probability	Expected Sales	Probable Sales
50%	$3,000,000	$l,500,000
30%	2,000,000	600,000
20%	4,000,000	800,000
l00%		$2,900,000

The probabilities are based on the manager's best judgment. The probabilities may be expressed in either quantitative (percentages) or relative terms (high or low probability of something happening).

A typical department budget appears in Exhibit 2. A typical checklist for the budgeting system appears in Exhibit 3.

EXHIBIT 2
XYZ COMPANY DEPARTMENT BUDGET REPORT

Department_____
Department Administrator_____

Classification	**Dollar Amount**		**Over or Under**		**Percent Realized**	**Moving Average**	
	Budget	**Actual**	**Current Month**	**Cumulative to Date**	**Current Month**	**Current**	**Prior**
Direct Labor							
1							
2							
3							
4							
5							
Total Direct Labor							
Indirect Labor							
Indirect Salaries							
Supervisor Salaries							
Cleaning							
Holidays and vacations							
Idle Time							
Other Salaries							
Sub-total							
Other Department Costs							
Operating Supplies							
Tools							
Telephone							
Travel							
Consultants							
Memberships							
Misc. Department Expenses							
Sub-total							
Total Department Expenses							

EXHIBIT 3
A BUDGETARY CHECKLIST

Schedule	Who Is Accountable?	Date Required	Date Received
1. Establish overall goals.			
2. Set division and department objectives.			
3. Estimate			
a. Capital resource needs.			
b. Personnel requirements.			
c. Sales to customers.			
d. Financial status.			
4. Preparation of budgets for:			
a. Profitability			
b. Revenue			
c. Production			
Direct material			
Direct labor			
Factory overhead			
d. Marketing budget			
Advertising and promotion			
Sales personnel and administration			
Distribution			
Service and parts			
e. Cash budget			
f. Budgeted balance sheet			
g. Capital facilities budget			
h. Research and development budget			
5. Prepare individual budgets and the master budget.			
6. Review budgets and prepare required changes.			
7. Prepare monthly performance reports.			
8. Determine difference between budget and actual costs (revenue).			
9. Prepare recommendations to improve future performance.			

STRATEGIC PLANNING

Strategic plans are long-term, broad plans ranging from 2 to 30 years, with 5 to 10 years being most typical. Strategic planning is continuous and looks where the company is going. It is done by upper management and divisional managers. Most of the information used is external to the company.

The strategic plan is the mission of the company and looks to existing and prospective products and markets. Strategic plans are designed to direct the company's activities, priorities, and goals. It tries to position the company so as to accomplish opportunities. Strategic goals are for the long-term considering the internal and external environment, strengths, and weaknesses.

Strategy is the means by which the company uses its capital, financial, and human resources to achieve its objectives. It shows the company's future direction and rationale, and looks at expected costs and return. Strategic planning is detailed plans to implement policies and strategies. Risk-taking decisions are made. Strategies may be implemented at different times. Strategic planning should take into account the financial position, economy, political environment, social trends, technology, risks, markets, competition, product line, customer base, research support, manufacturing capabilities, manpower, product life cycle, and major problems.

Strategic planning is a prerequisite to short-term planning. There should be a linkage of the two. There is considerably more subjectivity *in* a strategic plan than a short-term plan.

The strategic plan is formulated by the chief executive officer and his or her staff. It considers acquisitions and divestitures. Financial policies including debt position are determined. It must consider economic, competitive, and industry factors. It establishes direction, priorities, alternatives, and tasks to be performed. The strategic plan is the guideline for each business segment and is the mechanism of the needed activities to accomplish the common goals.

Strategic planning is irregular. Further, strategic planning problems are unstructured. If a strategy becomes unworkable, abandon it.

The elements of a strategic plan are:

- The company's overall *objectives* such as market position, product leadership, and employee development.
- The *strategies* necessary to achieve the objectives such as engaging in a new promotion plan, enhancing research, product and geographical diversification, and eliminating a division.
- The *goals* to be met under the strategy.
- The *progress-to-date* of accomplishing the goals. Examples of goals are sales, profitability, return on investment, and market price of stock.

In summation, strategic planning is planning for the company as a whole, not just combining the separate plans of the respective parts. There must be a common thread. It looks to the long-term. It is concerned with the few key decisions that determine the company's success or failure. It provides overall direction. It indicates how the long-term goals will be achieved. It is a mission policy statement. Critical issues must be dealt with.

SHORT-TERM PLANS

Short-range plans are typically for one year (although some plans are for two years). The plans examine expected earnings, cash flow, and capital expenditures. Short-term plans may be for a period within one year, such as a month or week. Short-term planning relies primarily on internal information and details tactical objectives. It is structured, fixed, foreseeable, and continually determinable. The short-term profit plan is based on the strategic plan. It is concerned with existing products and markets.

There should be a short-term profit plan by area of responsibility (product, service, territory, division, department, project, function, and activity). Short-term plans are usually expressed on a departmental basis. They include the following plans: sales, manufacturing, marketing, management (administration), research, and consolidation (integration).
Short-term planning has more lower-level managers involved in providing input. The line manager is typically involved with short-term rather than long-term plans. In making his short-term plan, the line manager should consider the company's objectives and targets outlined in its long-term plan. The manager's short-term plan must satisfy the long-term objectives of the company.

LONG-TERM PLANS

Long-term planning is usually of a broad, strategic (tactical) nature to accomplish objectives. A long-term plan is typically 5-10 years (or more) and looks at the future direction of the company. It also considers economic, political, and industry conditions. Long-term plans are formulated by upper management. It deals with products, markets, services, and operations. Long-range planning enhances sales, profitability, return on investment, and growth. Long-range plans should be constantly revised as new information becomes available.

Long-range planning covers all major areas of the business including manufacturing, marketing, research, finance, engineering, law, accounting, and personnel. Planning for these areas should be coordinated into a comprehensive plan to attain corporate objectives.

A long-term plan is a combination of the operating and developmental plans. The long-term plan should specify what is needed, by whom, and when. Responsibility should be assigned to segments. Long-term goals include market share, new markets, expansion, new distribution channels, cost reduction, capital maintenance, and reduction of risk. The characteristics of sound long-term objectives include flexibility, motivation, measurability, consistency and compatibility, adequateness, and flexibility. Long-range plans may be used for growth, market share, product development, plant expansion, and financing.

Long-range plans are details of accomplishing the strategic plans. Compared to strategic planning, long-range planning is closer to planning current operations of all units of the business. Long-range planning includes evaluating alternatives, developing financial information, analyzing activities, allocating resources, product planning, market analysis, planning man power, analyzing finances, research and development planning, and production planning.

The time period for a long-term plan depends upon the time required for product development, product life cycle, market development, and construction of capital facilities. There are more alternatives available in long-term plans. When there is greater uncertainty in the economic and business environment, long-range plans become more important. However, it is more difficult to plan long-term than short-term because of the greater uncertainties that exist. An illustrative long-term plan appears in Exhibit 4.

EXHIBIT 4
LONG-TERM PLAN

		Amount
Contract acquisitions	—Customer	
	—Division	
	—Company	
Sales backlog	—Customer	
	—Division	
	—Company	
Total sales		
Profit margin		
Return on investment		
Capital expenditures	—Assets	
	—Leases	

TIME PERIOD
The budget period depends upon the objective of the budget and the reliability of the data. Most companies budget yearly, month-by-month. For example, a seasonal business should use the natural business year beginning when accounts receivable and inventory are at their lowest level.

The time period for a plan should be as far as is useful. It depends upon the time to develop a market, production period, develop raw material sources, construct capital facilities, product development, and product life cycle. The time period also should take into account the type of industry, reliability of financial data and use to which the data will be put, seasonality, and inventory turnover. Shorter budgeting cycles may be called for when unpredictable and unstable events occur during the year. Short-term budgets have considerably more detail than long-term budgets.

ADMINISTERING THE PLAN
There should be a committee of senior operating and financial executives involved in administering a budget. The administration plan consists of human resource planning for the various functions to be carried out, technological resource planning, and organizational planning.

PROFIT PLAN
A profit plan is the premise upon which management charts an action course for the upcoming year. It is good for planning and control. Alternatives must be evaluated and the profit plan should be flexible to adjust for contingencies. Profit planning includes a study of appraising profits relative to investment. A profit budget may be used to supplement a cost budget. Profit budgets may be by customer, territory, or product.

The profit plan must set forth selling price, sales volume, sales mix, per unit cost, competition, advertising, research, market potential, and economic conditions. Profit may be improved through a closer correlation of manufacturing, selling, and administrative expense budgeting to sales and earnings objectives. Cost reduction programs will lower expenses.

Continuous profit planning is used when planning should be for short time periods and where frequent planning is needed. The yearly or quarterly plan may be revised each month.

OPERATIONAL PLAN

The preliminary operational plan is an important part of the strategic plan. It examines the alternative strategies so as to select the best one. The *final* operational plan is much more detailed and is the basis to prepare the annual budgets and to evaluate performance. It also acts as the basis to integrate and communicate business functions. It is concerned with short-term activity or functions of the business. The operational plan typically includes: production, marketing (selling), administration, and finance. It examines properly serving product or service markets.

The operational plan summarizes the major action programs and contains the following information: objective, program description, responsibility assignments, resource needs (e.g., assets, employees), expected costs, time deadlines for each stage, input needed from other business segments, and anticipated results.

DEVELOPMENT PLAN

The development plan typically includes research and development, diversification, and divestment. It relates to developing future products, services, or markets. The development plan mostly applies to new markets and products. Bonuses should be given for new ideas.

The corporate development plan is concerned with:

- Discovering or creating new products
- Identifying financially lucrative areas and those having growth potential
- Ascertaining what resources are required in terms of assets, manpower, and so on
- Determining the feasibility of expanding operations into new areas.

CONTINGENCY PLANNING

Contingency planning is anticipating in advance unexpected circumstances, occurrences, and situations so that there can be a fast response to a crisis. All possible eventualities should be considered. Contingency planning involves identifying the possible occurrence, ascertaining warning signs and indicators of a problem, and formulating a response.

Contingency planning can be in the form of flexible (bracket) budgets. The plan should be modified if needed to generate the best results. There should be flexibility in the plan to adjust to new information and circumstances and to allow for the resolution of uncertainties.

ACTIVITY BUDGET
An activity budget is a revised analysis of a budget showing expenses at budgeted rates adjusted to actual production volume.

THE BUDGET PROCESS
In one company the author is familiar with, the Financial Planning Department issues guidelines to department managers. The manager then submits his or her plan to Financial Planning. The plan is returned to the manager if guidelines have not been adhered to. Financial Planning coordinates the plan from the bottom up. The budget goes down to the supervisory level. The company also uses program budgeting which involves the allocation of resources.
The budgeting process requires good, timely communication. Upper management must make its budget goals clear to departmental managers. In turn, the managers must explain departmental operating conditions and limitations.

DEPARTMENTAL BUDGETS
The decision units in the plan must be identified, and the manpower and dollar support at each decision unit must be noted. Department managers should plan for specific activities. They should put their budgets and trends in perspective relative to other departments in the company, to competing departments *in* other companies, and to industry norms. The manager should list the problems needing solution or the opportunities to be further capitalized on.

BUDGET ACCURACY
The accuracy of budget preparation may be determined by comparing actual numbers to budget numbers in terms of dollars and units. Budget accuracy is higher when the two figures are closer to each other. Ratios showing budget accuracy include:

Sales Accuracy = Actual Sales/Budgeted Sales
Cost Accuracy = Actual Cost/Budgeted Cost
Profit Accuracy = Actual Profit/Budgeted Profit

EXAMPLE 2
A manager budgeted sales for $2,000,000 but the actual sales were $2,500,000. This favorable development might be attributed to one or more of the following reasons:

- Deficient planning because past and current information were not properly considered when the budget was prepared.
- The intentional understatement of expected sales so the manager would look like a hero when actual sales substantially exceeded the anticipated sales.
- Higher revenue arising from better economic conditions, new product lines, improved sales promotion, excellent salesperson performance, or other reason.

A significant deviation between budget and actual amounts may indicate poor planning. Is the planning unrealistic, optimistic, or due to incompetent performance? However, the problem may be with wasteful spending or inefficient operations.

REPORTS
A typical report for manufacturing cost analysis is presented in Exhibit 5. Performance reports are typically issued monthly.

EXHIBIT 5
MANUFACTURING COST ANALYSIS

				Overhead			*Average*		
Product Line	*Units Produced*	*Material*	*Labor*	*Variable*	*Fixed*	*Total Cost*	*Unit Cost*	*Selling Price*	*Gross Margin*

BUDGET REVISION

A budget should be revised when it no longer acts as a useful planning and control device. Budgets should be revised when a major change in processes or operations occur, or when there are significant changes in salary rates. For example, additional competitors may enter the market with a product that sells at a lower price and is a good substitute for the company's product. This may make meeting the budgeted market share and sales unlikely. If management recognizes that even with increased promotional expenditures, budgeted sales are not realistic, all budgets affected should be revised. These revisions are preferable to using unattainable budgets. Budgets that are repeatedly revised are more informative as a control measure. For a one year budget, budget estimates may be revised quarterly. Budget revisions should be more frequent in unstable businesses.

PERFORMANCE MEASURES

Performance measures should also be directed at the lower levels in terms of each employee. Specific task performance should be measured. Employee performance may be measured by computing revenue per employee, man-hours per employee, and production volume to man-hours.

CONTROL AND ANALYSIS

Control is important in budgeting. Budget figures may be checked for reasonableness by looking at relationships. The budgeted costs must be directly tied to planned production output. The manager must be able to strongly defend his initial budget figure and to obtain needed facts. Budget comparisons may be made by current year month to last year month, current year quarter to last year quarter, and cumulative year-to-date. A comparison is therefore made to similar time periods.

Costs should be examined by responsibility. Cost reduction is different from cost control. Cost reduction attempts to lower costs by improving manufacturing methods and procedures, work assignments, and product or service quality. Cost control includes cost reduction. Cost control attempts to obtain cost objectives within the operational setting. Value analysis is an evaluation of cost components in an operation so as to minimize them ~o achieve higher profits.

Compare the company's segments to similar segments in competing companies. Variations from the plan should be studied and controlled. The integrated (consolidated) plan is usually prepared yearly. A change in one department's plan will likely affect another department's plan.

CHAPTER 3
PROFIT PLANNING: TARGETING AND REACHING ACHIEVABLE GOALS

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define profit planning
- Explain the basic principles of profit planning
- Identify the objectives of profit planning
- Describe the role of managers in achieving profit targets
- Give a few real-life illustrations of profit planning

In profit planning we must determine the strategy, which is one of several ways to reach a goal. But we must also determine the objective which is the target or position that can be quantified, and that is developed from analysis of the situation at present and future. And finally we must see what is needed to implement the plan.

Profits are planned, they just do not happen. Profit planning involves setting realistic and attainable profit objectives and targets, and then accomplishing them. The profit plan must consider the organization structure, product line (e.g., up-to-date, obsolete), services rendered, selling prices, sales volume, costs (manufacturing and operating expenses), market share, territories, skill of labor force, sources of supply, economic conditions, political environment, risk, sales force effectiveness, financial health (e.g., cash flow to fund programs), physical resources and condition), production schedules, human resources (e.g., number and quality of employees, training programs, relationship with union), distribution facilities, growth rate, technological ability, motivational aspects, publicity, and so on. Each part of the profit plan must be evaluated for reasonableness as well as its effect on other parts of the plan. Each activity should be looked at closely to see if it is contributing to profitability. Trouble spots must be identified and corrected. Information should be in the simplest and clearest form to accomplish the desired result.

Objectives vary with the organization's type and stage of development. Broad objectives should be established at the top and retranslated in more specific terms as they are communicated downward in a means-end hierarchy. Each subunit may have its own specific goals. A conflict sometimes exists in determining organizational objectives. For example, customer service may be one objective, but profitability or return on investment may be a conflicting objective. Thus, the annual profit plan is usually based on a combination of financial, quantitative, and qualitative measures.

Profits may be increased by increasing revenue (selling price and/or sales volume) and reducing costs. Profit planning involves cost reduction such as by eliminating duplication of work and inconsistencies.

A manager can improve profitability of his or her responsibility unit by:

- Operating his or her department with the minimum number of employees. This may include downsizing through layoffs.
- Reducing operating costs such as using automation and robotics to replace the cost of manual labor
- Buy rather than lease when cost beneficial
- Emphasizing previous success. For example, if growth has come from product development, then allocate more funds to R&D.
- Keeping up-to-date
- Using high-technology equipment
- Self construct assets when feasible
- Eliminating useless operations and paper work (e.g., reports)
- Being productive and progressive in obtaining efficiencies realizable with existing resources and capabilities
- Improving the reliability of the product and service
- Expanding into new operations and areas so every opportunity is pursued
- Improve supplier relationships including negotiating better pricing and terms. Alternative sources of supply may be contracted for when cost-effective.
- Screen new hires for honesty and competence
- Have adequate insurance including business interruption and product liability
- The profit plan should be in writing, consistently applied, and contain the following key elements:
- Statement of objectives
- Parameters of achieving those objectives (e.g., prohibition of reducing discretionary costs such as research and development in the current year just to bolster near-term profits but will have long-term negative effects
- Plans (operating and financial)
- Schedules
- Ways to measure and track performance
- Review procedures
- Mechanism for making needed changes

An operating plan tells how the objective is to be done. The operating plan provides the detail procedures to accomplish the goal. For example, an operating plan for a sales manager may provide for a reduction in selling expenses of 10% by improving salesperson productivity through better training, reducing the number of salespeople, and increasing the number of calls per salesperson. The financial plan is a budget expressed in dollars that quantifies the operating plan. Lower-level managers are more involved with operational specifics (details) and carrying out plans than upper-level managers.

Planning should occur on a reasonable time frame, not rushed, considering alternatives that accomplish the long-term objectives of the manager. For example, a new product should undergo "test marketing" before it is introduced on a massive scale. Further, profit planning for the next year should begin as early as possible. It must be in place by January 1 of that year not after. However, the plan may be changed as circumstances warrant.

The profit plan may be for one year and multi-years (e.g., covering 3 or 5 year periods). For example, in a 5 year plan, there should be profit objectives set for each of the years included

in that plan. A 5 year plan should be the maximum time period because the longer the time horizon the more difficult it is to predict. Further, a 5 year period would be more practical and attainable then longer periods. The time period chosen should take into account the nature and stability of the business.

Reports should provide the manager with the "right" information needed to make a good decision. Once that decision has been made, control reports should show whether that decision has worked out well and why or why not. Further, the manager should not procrastinate once he or she has made a decision. It may be worse not to make a decision. The manager should not keep changing his or her mind because the employees may not know what to think or what should be done.

The manager must address what is crucial! For example, material costs are important to a manufacturing company but not to a financial service business. In airlines, passenger revenue per mile is crucial. Information has to be given to the "right" manager for action. It must directly relate to his or her operation.

The type of profit plan and its components will differ among companies depending on their unique characteristics, features, problems, conditions, and requirements. Unfortunately, profit planning has become more difficult because of competition, the high cost associated with introducing new products (e.g., research and development), more educated consumers, and government regulation.

This chapter discusses establishing and evaluating profit targets, planning objectives, role of managers, plan assumptions and alternatives, manager responsibilities, participation in the planning process, employee relations, coordination and communication, scheduling, handling problems, and analysis and control of the profit plan.

GOAL CONGRUENCE

We must keep in mind goal congruence, which is top managements' viewpoint with the lower level managers' viewpoint. Some of this activity could be misdirected if each manager assumes, as is human, that what is good or better for his responsibility center is good or better for the company. Therefore, they must reconsider general company goals and assumptions as a background for all planning activity. General goals are usually obvious to all concerned and are the same for all companies. The standard philosophy is that "more is better." That is more sales, products, fields of activity, profit and return. Most businesses feel that ceasing to grow is beginning to die.

PROFIT TARGETS

Profit planning sets a target profit which takes into account expected sales and costs for next year, two years, three years, etc. Profit plans for some companies are from 1 to 5 years. The manager should track on a regular basis the progress in meeting the profit plan so any needed adjustments may be made to selling effort or cost containment. For example, if the yearly target is an increase in sales of 20% and in the first quarter sales have actually decreased by 2% a problem is indicated. On the other hand, if the profit plan calls for a reduction in yearly costs of 10% and at the end of the second quarter costs have been trimmed by 12%, the situation is quite favorable in not only meeting the objective but also surpassing it.

A profit target can apply to the individual components of that profit. For example, a company which now derives 80% of its earnings from one product may have as its profit goal in three years to derive 40% of its profit from this product and 60% of its profit from other products. This may be due to a diversification policy. This goal may be achieved through developing new products, enhancing existing products, change in advertising and sales promotion, R&D efforts, and so on.

OBJECTIVES IN THE PROFIT PLAN

An objective states what is going to be done. The objective must be clear, quantifiable, compatible, practical, strong, realistic, and attainable (not too easy or too difficult). A general and vague objective is of little value. The objective should be in writing. Objectives should not be changed often because otherwise they become meaningless. Further, objectives must not be conflicting.

The objective must be definite and specific. For example, an objective of increasing sales should specifically state by how much, where, and when. It may take the following form: "The divisional objective is to increase sales by 50,000 units of product X in territory A for 20x2." The manager should clearly communicate objectives to subordinates.

Objectives should be established in priority order so that high priority items will be given the greatest attention and emphasis. An example is a marketing department that should give primary emphasis to the existing, successful product line and secondary emphasis to unproven, high-risk new products. Another example is the R&D manager who should give first priority to basic research to improve the existing products and a lower level of priority to research on new products.

Objectives should be ranked in terms of those having the highest return. The progress toward meeting the objective should be measured at regular, periodic intervals (e.g., quarterly). This is needed to see if the original objective is sound and if corrective steps are immediately called for.

ROLE OF MANAGERS

Managers want to know what is expected of her so she can monitor her performance and accomplish the goals. The manager must know what's ahead, what's happening, what to do, and how to do it.

The manager must abandon "sacred cows" to increase profits. For example, a less expensive raw material may be used to result in cost savings without sacrificing product quality. Another example is to lower the quality of a product to save on costs and reduce the selling price to attract more business from price-oriented customers. A company that sells only to a few prestigious accounts that are willing to pay a higher price may produce greater overall profits by lowering the quality and price to get a huge number of price sensitive accounts. Conversely, the company may keep its high-priced product as is and develop a new second product line of lower prices with a different label to attract the price conscious consumer. These are all possible strategies.

The marketing manager may increase profits by increasing the selling price, increasing volume, improving quality and service, reducing the time to respond to customer complaints,

concentrating on high-demand products, modifying geographic locations, having clean facilities, altering distribution outlets, introducing new products, redesigning packaging, attractive styling, discontinuing unprofitable products, increased personal selling, changing the sales force, and modifying advertising and sales promotion policy. The marketing manager should determine how much of each sales dollar goes to meeting marketing expenses. A lower ratio indicates greater productivity on the part of marketing. The marketing manager should also determine the ratio of the change in marketing expenses over the year to marketing expenses last year to determine the degree of cost control. The marketing manager must keep abreast of national and regional marketing trends for products and services.

The marketing manager should rate salespeople in terms of the net profitability brought in. A comparison should be made between the salesperson's actual sales relative to the salesperson's costs to obtain those sales. Other performance measures are dollar sales quota and the number of orders from existing and new customers.

A sales analysis should be undertaken by the marketing manager. This analysis examines orders booked, orders backlogged, orders lost by out of stock or delayed shipments, ratio of orders billed to orders booked, and aging of orders. A sales effort analysis involves the number of sales calls, number of advertisements and mailings, number of new customers, market share, and sales mix.

The production manager may maximize profits by spreading manufacturing as regularly as possible over the entire year. This may add stability to manufacturing and lower costs (e.g., eliminate overtime, layoffs vs. rehiring and training). The production manager may also maximize profits through private labeling for other companies. This would achieve better plant and machinery utilization, and spread fixed costs over more units. The production manager should also maintain plant facilities, obtain givebacks from employees or not give raises, derive optimum inventory balances and reduce inventory costs, lower raw material costs, and properly schedule production.

The production manager should use the following factory performance measures: capacity in use and units produced, percentage of rejects and rework, yield percentages for direct materials and purchased parts, and trends in costs of service especially during new product learning curve periods.

The purchasing manager can increase profits by properly timing the purchase of raw materials, obtaining volume and cash discounts, changing suppliers to obtain lower prices assuming reliability in delivery, and inspecting items to assure quality is being maintained.

The transportation manager can boost profits by scheduling delivery routes to economize on time lowering mileage cost including fuel and depreciation.

The personnel manager can increase profits by instituting an incentive plan to improve dollar revenue per employee and sales volume per worker. He or she should also examine the ratio of the number of annual terminations to the average number of employees. The research director can increase profits by substituting low-cost components for high-cost ones without sacrificing quality or customer acceptance.

The engineering manager can increase profitability by reducing the number of diverse elements in use (e.g., 100) to standardized ones (e.g., 20), and finding less cost combinations of inputs (e.g., materials and labor mix).

The service manager is concerned about the percentage of billable time, standard and average billing rate, average cost per hour of employee time, and overhead (or markup) rate required to be applied to labor time. The service manager should maintain a system that can differentiate quickly and accurately among customers based on both the degree of service they require and the revenues their patronage is likely to generate.

The credit manager can increase profits by reducing bad debts and the collection period without losing sales.

Because a manager's responsibility is to plan and control, she must be able to effectively communicate in order to accomplish goals. Communication may be written (formal financial reports, ratios, statistics, narrative), graphical (charts, diagrams, pictures), and oral (conferences, group meetings).

ASSUMPTIONS

Profit plans rely on assumptions and projections. In planning, managers will have to make assumptions in order to predict the future. The assumptions must be continually updated for new or changed circumstances. Of course, any revisions require special approval.

A determination should be made whether the assumptions are realistic. If the assumptions are not realistic, say for an increase in selling price if there is a high degree of competition and/or a recession, the basis of the profit plan is in doubt. Further, an increase in selling price may result in a decline in sales volume hurting overall profits because consumers will switch to cheaper brands (e.g., away from Philip Morris cigarettes).

ALTERNATIVES

The financial impact of alternatives in the profit plan have to be considered. Alternative plans may be made to handle different possibilities such as whether or not there will be a strike. The alternative selected should be practical and result in the highest profit in conformity with the manager's goals. What counts is the "bottom-line" and not the personal tastes of the manager. For example, the sales manager may prefer personally to sell through direct mail but he or she should sell through the manufacturer's representatives if that is more profitable.

The sales manager should try to obtain the most profitable sales revenue at the minimum selling cost. Some of the sales manager's options are:

- Modify advertising and sales promotion.
- Change the method of distribution.
- Eliminate unprofitable products.
- Develop new markets and products.
- Combine small orders to make larger orders to reduce
- Transportation charges.
- Redesign truck routes to economize on fuel.

- Change the sales territory.
- Alter the selling price.
- Change credit and collection policies.
- Alter packaging and labeling.

The production manager is responsible for manufacturing sufficient quantities to meet sales needs at the lowest practical cost while maintaining quality within a desired time period. Some options the production manager may consider to meet his or her objectives are:

- Improve the production process and supervision of workers.
- Change the repair and maintenance policy.
- Move production elements (e.g., machinery) or entire facilities.
- Use higher technology equipment.
- Determine the best production run.
- Properly schedule workflow and employee time.
- Synchronize production and inventory levels.
- Reduce fixed costs.

The purchasing manager is responsible for buying materials and supplies at the least cost but maintaining quality. The purchasing manager has the following alternatives to maximize earnings:

- Carefully inspecting the quality of purchased items.
- Decrease the days elapsed between purchase and delivery.
- Decide on less expensive product substitutes.
- Obtain volume discounts from larger orders.
- Reduce inventory cost by having more frequent deliveries.
- Emphasize standardized (uniform) items rather than a multitude of diverse items.
- Changing suppliers who have proven unreliable.

The personnel manager may improve profits by considering the following options:

- Expanding on job training.
- Improving recruitment.
- Establishing merit increases based on performance.
- Selecting the right person for the right job.
- Self-insuring to eliminate insurance premiums such as on health care.

RESPONSIBILITY

With responsibility must come authority to carry out decisions. Profit planning requires that managers be held accountable for their results as long as they have authority over the items in question. If responsibility is assigned without authority, the profit planning system fails and manager frustration occurs.

Profit planning involves avoiding conflicts which has a net negative profit impact on the business. An example is a sales manager who accepts short-term low-volume sales orders even though it results in unusually high manufacturing costs for the production manager. A solution is

to make managers jointly responsible for an objective that affects both. In other words, interrelated departments must as a group work to maximize company profit by considering the net advantage or disadvantage to the business. There should be a sharing of credit (blame) to the managers for good (bad) performance that have interrelated effects. In this way, all managers will work toward meeting the overall company objectives. However, each member of the team must do his or her part.

The manager must determine whether responsibility unit managers are each contributing what they are supposed to in the profit plan. Each unit manager under the manager must contribute in the expected proportion or degree.

PARTICIPATION

Profit planning involves effort and input by all managers within the business including sales managers, production managers, distribution coordinators, research and development managers, service managers, engineers, financial managers, traffic managers, and general business managers.

Line managers are concerned with operating and executing plans. Staff managers assist others in an advisory capacity. In either case, the manager must be able to change and try new things.

Financial people should spend time with operating personnel so they familiarize themselves with operations, problems, and requirements. The manager should encourage financial personnel to discuss with them the nature and characteristics of their department's or responsibility unit's operations. In this way, the accountant or financial executive can prepare meaningful budget information and performance reports that can be used by managers. The managers should insist on getting reports, schedules, and forms that are useful to their activities. Otherwise, the information furnished to the manager may not be suitable or relevant to his information needs and will be discarded. Therefore, managers should clearly communicate to financial managers the type and nature of information they need to do their job. Otherwise time and money has been wasted in the preparation of useless information to managers. This also has the negative effect that managers may waste their time in accumulating accounting numbers themselves when they should be spending time on the operations of their segments.

SUBORDINATES

The manager must monitor the performance of subordinates to which he or she has delegated responsibilities. However, he or she should give the managers latitude in making decisions.

Subordinates should be rewarded (e.g., salary increases, merit bonuses) based on positive results achieved to improve divisional profitability. The optimum pay raise is the minimum pay increase that will yield the maximum productivity increase. Managers who have made bad decisions that have hurt profitability should be called to account for their mistakes. They should learn from their errors. If too many errors have been made, a replacement might be appropriate.

Compensation to subordinates should be competitive with other companies in the industry. A limit should not be placed on employee salaries otherwise the successful employee may quit.

COORDINATION
Line and staff managers should communicate and cooperate with each other for mutual benefit. Profit planning is a team effort involving all managers, line and staff, to accomplish the profit goal. For example, there should be coordination between the sales manager, production supervisor, purchasing manager, receiving manager, director of engineering, and quality control supervisor since interrelationships exist between them.

SCHEDULING
A product introduced should be planned and scheduled. Production should be scheduled in the most economical way. Workers should be available when needed. Each step should proceed logically. Profit planning involves delivering products on time such as by reducing workers' absentee rates.

PROBLEMS
The profit plan should consider problems faced by the business so that ways to counteract those problems may be formulated. The problems have to be identified, addressed with solutions, and profit impacts considered. If the problems cannot be rectified (e.g., uncontrollable by the company) the adverse effects must also be taken into account. An example of a problem is when a manufacturer may lose some retail accounts because of competitors' price cuts and an existing poor relationship between the manufacturer and the retailers because of delivery delays due to a strike.

CONTROL, EVALUATION, AND ANALYSIS
A management information system (MIS) includes financial information that allows the manager to measure actual results and compare them to target figures. It is better to analyze variances more often. For example, quarterly variance analysis may be too late to give managers the opportunity to correct problems. It may be far better to do a monthly analysis.

A comparison should be made over time between actual profit and budgeted profit. Related useful ratios are actual revenue to budgeted revenue and actual costs to budgeted costs. The profit expectation of the plan should be compared to prior years' experience as an indicator of reasonableness. In other words, proposed performance may be compared to past accomplishments. For example, it may not be reasonable to project a sales increase for next year of 40% when in previous years the sales increase has never exceeded 20%. There must be hard evidence (e.g., something in the current year and expected for a future year to justify it) for this dramatic increase. If not, it is suspect. Perhaps a downward adjustment in the plan should be made for this sales increase to make it realistic.

The projections in the profit plan should be compared to competing companies' experiences. For example, company X will start a new program or project if it earns a rate of return of 30%. However, six competing companies have already tried this program or project and either have lost money or earned a return rate below 5%. This makes the company's projected 30% rate of return questionable unless it can be shown that special or unique reasons justify this dramatic increase.

Ratios may be prepared comparing projected performance to historical performance. Some useful ratios include return on investment (net income/total assets), profit margin (net income/sales), cost of sales to sales, direct material to sales, direct labor to sales, factory

overhead to sales, selling expenses to sales, and general and administrative expenses to sales. However, in making ratio calculations, the data must be comparable over the years.

The manager should not overstate current year profit at the expense of sacrificing future profitability. Is the current year earnings produced from hurting future operations?

The manager must track the status of a project or program, and make immediate decisions. If an operation is not productive or profitable, for example, consideration should be given to eliminating it. Further, part of a department that no longer serves a useful purpose may be disbanded.

A comparison may be made between the unit costs of the old manufacturing operation to the new manufacturing operation to see if the latter is successful.

After a product has been marketed, the company must continually evaluate and improve it based on customer reaction. Feedback should occur on a timely basis so corrective steps may be taken and while there is sufficient time to engage in alternative courses of action.

Feedback should be prompt so remedial action may be taken on a timely basis before it is too late. For example, if identification of a problem is delayed by one month, a loss for that month has been incurred which may have been avoided. Further, the manager may have delayed a viable alternative.

The use of budgets for planning only is a problem that must be resolved through the education process. Management must be educated to use the budget documents for control, not just planning. Management must learn that budgets can motivate and help individuals achieve professional growth as well as the goals of the firm. Ignoring budgets obviously contributes to the ineffectiveness of the budget system. Finally, feedback must be timely or lower management and employees will soon recognize that budget feedback is so late it provides no information, making the budget a worthless device.

In order to make valid comparisons between the company and a competitor, there must be a comparable base. For example, if one company has old and inefficient plant facilities it is not comparable to one with modern, efficient facilities. The latter has the advantage.

An illustrative profit plan is presented in Exhibit 1.

EXHIBIT 1
PROFIT PLAN

	Jan.	Feb.	Mar.	First Quarter	Remainder of year	Total for Year
Sales						
Units						
Dollars						
Less: Returns						
Discounts						
Net Sales						
Expenses						
Cost of Goods Sold						
General & Administrative Expenses						
Selling Expenses						
Total Expenses						
Operating Profit						

INTERNAL CONTROLS

Internal controls are fundamental in profit planning, Assets should be safeguarded and controlled. An individual's work should be checked by another. One person should not have control over a transaction from beginning to end. Requests and requisitions should be reviewed and approved. Before an item is paid, make certain it is appropriate. Make sure we get what we ordered and we are charged the appropriate amount.

"REAL-LIFE" ILLUSTRATIONS IN PROFIT PLANNING

We provide some illustrations of actual companies who have taken specific steps to improve profits through sound planning. Staples, the office supply company, achieves the lowest net-landed cost in the entire office stationary business. But it has also come into a particular market: companies employed fewer than 50 people. To further the relationship with this market segment, it has created a club. Customers join at no extra cost and get at least a 5% discount on fast moving items. But to get the discount the customers must show their card. This means that Staples can track sales by customer and that gives the company all kinds of data it can use in satisfying its market. Some store managers now have incentives based on customer satisfaction.

Another idea of customer satisfaction is those companies that are willing to spend time now to build customer loyalty for the long-term. These companies typically look at the customer's lifetime value to the company, not the value of a single transaction. Home Depot is one example of such a company. Clerks do not spend time with customers to be nice. They do so because the company's business strategy is built not just around selling home repair and improvement items inexpensively, but also around the customers needs for information and service. One principle that such companies understand well is the difference between profit or loss on a single transaction and profit over the lifetime of their relationship with a single customer.

Although new products win new markets, it may be better in some cases to stick with existing customer segments. It's easier to build sales volume with customers who already know the company. When Entenmanns of New York, a loyalty leader in specialty bakery products saw

its sales leveling off, it monitored customer purchase patterns in each local market. Through direct contact with customers via telephone surveys and focus groups, the company found that consumers would buy those products that were available. These consumers were looking for fat-free and cholesterol-free items. Ultimately, the company determined that it was much more economical to develop new health products than to go with another group of customers. Entenmanns new product line has been highly successful. It addressed the changing needs of the company core clientele and even attracted new customers.

Another company that believes that customer loyalty plays a major role in profit planning is the Olive Garden restaurant chain. They go against the norm of moving successful managers to open new restaurants or to run bigger ones every few years and letting assistants take over. The chain hires local managers whose major asset is that they are known and trusted in the community. Managers are held in place where they are. Learning accumulates as people stay on the job. By getting to know the customers, long-time hires add value to the company. It is with employees that the customer builds a bond of trust and expectations, and when those people leave, the bond is broken.

Another company which employs this same philosophy is State Farm, the insurance company. Its focus on customer service has resulted in faster growth than most other multiple-line insurers, but rather than being consumed by growth, its capital has mushroomed (all through internally generated surplus) to more than $18 billion representing the largest capital base of any financial services company in North America. They began by choosing the right customers, and this is one of the reasons they were still able to build the capital necessary to protect their policyholders in years such as 1992 when they incurred $4.7 billion in catastrophe losses. State Farm agents work from neighborhood offices, which allows them to build long lasting relationships with their customers and provide personal service. For example, agents scan the local newspaper for the high school honor roll and are sure that their young customers' good grades are recognized with discounts. Commissions are structured to encourage long-term thinking. Rather than bringing in lots of new customers, the company's marketing efforts encourage existing customers to buy additional products, like home and life insurance. State Farms success in building customer loyalty is reflected in retention rates that exceed 90%, consistently the best performance of all the national insurers that sell through agents. Customer loyalty is one way to achieve superior profits. Loyalty serves the best interest of customers, employers, and investors.

A strategy in profit planning is to bring and deliver value to customers. Global competition, changing markets, and new technologies are opening new roads to not just add value but to reinvent it. IKEA is one company that accomplished this. It changed itself from a small Swedish mail order furniture operation into the world's largest retailer of home furnishings. IKEA has transformed itself from the early 1960's into a global network of 100 enormous stores. In 2000, these stores were visited by more than 96 million people and generated revenues of $4.3 billion. Management has made IKEA into a profit and growth company with an average annual growth rate of 15% over the past 5 years and profit margins that estimate between 8% and 10%. IKEA's strategy is to sell simple high quality furniture kits that customers transport and assemble themselves, in huge suburban stores with plenty of parking and amenities. A portion of what IKEA saves on low cost components, efficient warehousing, and customer self-service it passes on to its customers in the form of lower prices - anywhere from 25% to 50% below those of competitors.

IKEA's strategy is to allow customers to take on key tasks that were traditionally done by manufacturers and retailers like the assembly of products and delivery to customers' homes - and it promises substantially lower prices. Part of their goal is to make themselves, not just a furniture store but a family outing destination. It provides free strollers, child care, and playgrounds as well as wheelchairs for the disabled and elderly. They also have dining facilities.

IKEA's strategic intent is to have its customers understand that their role is not to consume value but to create it. It provides customers with catalogs, tape measures, pens, and notepaper to help them make choices without the need of salespeople. IKEA's goal is not to relieve customers of doing certain tasks but to mobilize them to do easily certain things they have never done before. They have set out to systematically reinvent value and the business system that delivers value for customers and suppliers alike. The question is, "Does IKEA offer a product or a service?" The answer is neither - and both!

This change of values can be compared to cash withdrawals from automatic teller machines (ATMs). Not long ago it was inconceivable that a customer would replace a computer system for a personal relationship with a bank teller. But today the majority of cash withdrawals take place by means of ATMs. This is an example of a change in the entire value-creating system.

There are many implications for profit planning. First, value for customers can be restated to mobilize customers to take advantage and create value for themselves. Second, companies do not compete with each other anymore. Rather, it is the offerings that compete for the customers' money. Third, a result of a company's strategic task is the reconfiguration of its relationships and business systems. And finally, to win at this strategy the key is to keep offerings competitive. This is why IKEA has become the world's largest furniture retailer, and this strategy could be applied to many industries.

CONCLUSION

A profit plan may be stated in one of the following ways: (1) target return on investment (e.g., 20% ROI); (2) growth in earnings (e.g., 5%) or growth in earnings per share; or (3) percentage of sales. Performance reporting compares actual results with expectations.

Opportunities should be taken advantage of when they occur. All efforts must be expended to accomplish profit goals. Problems have to be identified and addressed. The manager should focus on the important information not on the unimportant. He or she has to get to the "heart of the situation" immediately. Finally, the manager should rank items in terms of profit potential and growth.

CHAPTER 4
ADMINISTERING THE BUDGET: REPORTS, ANALYSES, AND EVALUATIONS

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- List the three major types of reports and explain each
- Identify basic types of budget reports
- Give a list of items in the performance-to-budget report
- Explain the budget manual and what it contains
- Describe what the budget sheet is all about
- Understand the budget preparation calendar

A budget should be prepared for each department. Divisional budgets should be consolidated in a binder, and each department should have a separate file folder. The Chief Executive Officer (CEO) should distribute an executive budget memorandum to each department manager detailing the schedule, policies, and benchmarks for next year's budget. Responsibility should be assigned for collection and consolidation of budget information. Budget instructions, forms, and timetables should be provided. Budget forms should be simple and easy to follow.
The budget committee should consider the following items before approving a budget: accuracy of budgetary numbers, reliability of information upon which estimates are based, budget integration, reliability of source data, budgetary assumptions, and achievability of budgetary goals.

TYPES OF REPORTS

Long-term reports may be for the company as a whole or for specific areas. The benefit derived from reports should justify its cost. The budget reports are used for planning, control, and information.

Planning reports may be short term, looking at the company as a whole, each division, each department, and each responsibility center within the department. Short-term planning reports may be of income, cash flow, net assets, and capital expenditures. The reports should be prepared regularly. Special studies may be performed of "problem" segments not performing well. The special studies may be of product or service lines, activities or functions, geographic areas, salesperson performance, and warehousing.

Control reports concentrate on performance effectiveness and areas needing improvement. Budget to actual figures are compared by product, service, territory, and manpower.

Information reports assist in planning and policy formulation. The reports show areas of growth or contraction. They may be in dollars, units, percentages, or ratios. Trends are shown over time. An example of an informative ratio is selling expense to revenue. Informational reports study the trend in earnings, profit by product or service, profit by territory, and profit by customer.

Reports for upper management are comprehensive summaries of overall corporate operations. Top management generally prefers narrative reports. Reports are also prepared for special events of concern to top management. Adequate detail should be provided as needed. Middle-management reports include summarized information and detailed information on daily operations. A brief report should be presented at budget meetings.

Lower-level management reports typically deal with daily coordination and control operations. The reports usually emphasize production. Exception reports should be prepared indicating problems. Budget reports inform managers of progress made in meeting budgets and what went wrong, if anything.

A critical area should be reported upon more frequently. The frequency of reporting is less as the level of responsibility becomes higher.

Budget reports depend on the requirements of the situation and user. Budget reports should contain the following data:

- Trends over the years
- Comparison to industry norms
- Comparison of actual to budget with explanation and responsible party for variances. Follow-up procedures are needed for control.

Reports should get to the main points. Each report should begin with a summary followed by detailed information and should be comprehendible to those using them. The emphasis should be on clarity rather than complexity. Reports should be logically organized, relevant, and concise. Reports should be updated.

Reports may contain schedules, explanations, graphs, and tables. Reports should contain recommendations and highlight problem areas. The reports should be computerized. An illustrative budget worksheet appears in Exhibit 1.

EXHIBIT 1
BUDGET WORKSHEET

Account:
For the period:
Date:

Month **Components**

Explanation:
Assumptions:
Analysis:

Reports may be of the following types:

Periodic Reports. These are reports prepared at regular intervals. There is a continual comparison between budget and actual figures. They are the usual source of information to maintain control. They may be issued semi-annually, quarterly, monthly, and so on. Monthly reports are most common. Some information may be reported daily (e.g., shipments), while other information may be reported weekly (e.g., sales and production). The timeliness depends on cost/benefit analysis.

Advance Reports. Important partial information may be reported before all information is available for a periodic report. Delay in reporting this information will cause a managerial problem. "Flash reports" should be issued for unusual occurrences that must be reported upon immediately.

Special Studies. Special reports are issued for a specific, nonroutine purpose. Special studies may be required for problem situations or if a negative trend exists such as costs keep rising even though a cost reduction program has been implemented.

Budget reports may contain the following supplementary information depending upon need:

- Percent of capacity utilization
- Changes in marketing and distribution
- Change in selling price
- Average selling price
- Sales volume and units produced
- Distribution cost relative to sales
- Effect on sales of new product introduction, dropping products, and entering new product lines
- Change in the number of employees and man-hours.

A performance report should be prepared for each responsibility center going from the lowest level to the highest level. It indicates whether goals have been accomplished. Performance reports evaluate efficiency, and should be repetitive covering a short time period.

EXHIBIT 2

SUMMARY OF DEPARTMENT PERFORMANCE

Item and Description	*Actual*	*Budget*	*Percent of Budget*

The performance-to-budget report should contain the following information by department for year-to-date and for current period:

- Cost accounts
- Budget
- Actual
- Variances and reasons.

An illustrative report summarizing departmental performance is shown in Exhibit 2.

A performance-to-budget report (cost and variance statement) should be kept for feedback. It is used by management to evaluate the degree to which operating managers meet their budget.

Monthly performance reports should contain variances for the month and cumulative variances to date for the year. Variances can be expressed in dollars and as a percentage of budget.

The statistics and graphics in the report should vary depending upon user preference. For example, marketing managers are less inclined to receive statistical data than engineers. However, marketing managers prefer graphs. Graphs may be more informative in presenting relationships and summary comparisons. Graphs include diagrams and charts.

Reports should be timely. If reports are issued periodically, they should be on schedule. If reports must be delayed, a short update should be presented.

THE BUDGET MANUAL

A budget manual describes how a budget is to be prepared. Items usually included in a budget manual are a planning calendar and distribution instructions for all budget schedules. Distribution instructions are important because, once a schedule is prepared, other departments within the organization will use the schedule to prepare their own budgets. Without distribution instructions, someone who needs a particular schedule may be overlooked.

The budget manual communicates throughout the company the policies and procedures for budget preparation. It is the activities and rules to be followed in preparing a budget. It tells how the budget should be used by managers and who is responsible for the different aspects of the budgeting process including preparation, presentation, reporting, evaluation, and approval. It should list positions rather than names to avoid unnecessary updating. A preparation chart would be helpful. It provides the budgeting steps and aids in cooperation and coordination. The procedures to be followed to revise the budget based on changing conditions and goals should be specified. For example, revisions may be needed because of changing objectives, new methods, changing economic environment, and errors. The budget manual should be targeted to end-users, and should receive participation from all affected managerial levels.

The budget manual stipulates authority, responsibility, and duties; fosters standardization; documents procedures; simplifies the process; provides communication; answers users questions; enhances supervision; and fosters training. The manual should contain terminology and complicated accounting reports that are unfamiliar to nonaccountants.

The manual includes the following:

- Standardized forms, lists and reports
- Instructions
- Format and coverage of performance reports
- Administrative details
- Follow-up procedures.

Each department should be included in a separate section of the manual with index tab. Operating department managers and employees should provide input in the preparation of the budget manual. Managers and workers may have different information to impart. There may be operating problems, constraints, and limitations that must receive attention. There should be a standard cost table for different types of expenses used by managers of different departments throughout the organization. This allows for consistency and uniformity.

The manual should be in loose-leaf form so pages may be substituted for updates. The budget manual should contain:

- Budget objectives, purposes, procedures, guidelines, and policy
- Desired accomplishments
- Data description
- Personnel duties (who is to prepare, review, approve, and revise the budget).
- Who has authority and responsibility for budget items (There should be a designation of manager or subordinate who will perform the activity.)
- Approval requirements
- Who is to evaluate the difference between budget and actual figures, and who is to take corrective action and when
- Budget timetable
- Illustrative forms, lists, and reports
- Glossary of terminology
- Instructions to complete budget activities
- Uses of budget information
- Policies for budget modification and update calendar
- Communication between upper management and subordinates
- Coordination between departments of the budget
- Explanatory footnotes.

The layout of the manual should enhance its clarity and conciseness. It should be easy to understand for nonaccountants, so it should not contain complex or technical language. It should be arranged logically and orderly with a user friendly index and should be updated as conditions warrant, organized, idea—oriented, and descriptive. It should look professional in design. color, print size, etc., so it is taken seriously by users.

There are many advantages to the budget manual including simplification and standardization of budget procedures. It acts as a reference and provides an organized approach to the budget process. It provides consistency between departments and provides job description guidance to new employees and assists current employees to adjust to new positions when transferred or promoted. The manual helps employee continuity in doing the job.

THE BUDGET SHEET

A budget sheet should be designed to record the information used by the operating manager and budget preparer. The budgeting sheet should include the following information:

- Historical cost records used
- Cost formulas
- Changes in operating conditions
- Foreseeable conditions.

A budget data sheet should be prepared for each cost account in each department or cost center. Attached to the data sheet may be graphs, workpaper analysis, mathematical and statistical calculations, and so on. Budget revisions may also be incorporated.

Fixed, variable, and mixed costs are shown on the data sheet. Material, labor, and overhead should be listed. The sheets should be initialed by those preparing and approving them. The allowances specified *in* the data sheet should be mutually agreed upon by the preparer and operating manager.

A typical budget data sheet is shown in Exhibit 3.

EXHIBIT 3
BUDGET DATA SHEET

Date prepared: Time period:
Date accepted:
Date approved:
Date revised:
Cost center identifier
Account identifier
Activity unit
Amount and reason for revision

Items	Total	Fixed	Variable	Mixed (Semi-variable)
Total Budget				

A budget summary sheet should also be prepared summarizing the department's budget by listing each budgeted cost and the budget allowance based on average activity. The summary sheet summarizes the departmental budget data sheets. The operating departmental manager should always be provided with a copy of the budget summary sheet and budget data sheets.

A budget data book should be kept to keep the budgeting information in an orderly manner. The book contains by department the budget data sheets, supporting worksheets and analysis, and budget summary sheets.

PERFORMANCE REPORTS

The manager should prepare performance reports. Are objectives and targets being met by subordinates? Are operations being performed efficiently and effectively?

The performance-to-budget report should include the following information by department for month and year-to-date: budget, actual, and variance. Variances may be stated in dollars and percentage terms.

Typical reports summarizing departmental performance are presented in Exhibits 4 and 5.

EXHIBIT 4
SUMMARY OF DEPARTMENT PERFORMANCE

Item and Explanation	Actual	Budget	Percent of Budget

EXHIBIT 5
PERFORMANCE-TO-BUDGET REPORT

Department Identifier _____ Activity
Nonfinancial Manager _____ Budget
Actual
Percent of Budget

Year-to-Date			This Period				
Budget	Actual	Variance	Budget	Actual	Variance	Cause of Variance	Extra Budgetary Allowance for Variance
Totals							

BUDGET AUDIT

A budget audit examines whether the budgeting process is effectively operating. It is an evaluation of the budgeting effort. The budget audit examines techniques, procedures, motivation, and budget effectiveness. Effective budgeting should be dynamic.

A budget audit detects problems in the budgeting process. It should be conducted every two to three years by an independent party not a part of the budget staff. The budget auditor

should report to upper management, who can take appropriate action. An outside consultant should be independent and objective, and should provide fresh ideas.

There is an audit plan which assists in arriving at corrective action. The budget audit considers:

- Cost trends and controls
- Budget revisions
- How adequately costs were analyzed
- How costs were identified and classified
- Looseness or tightness of budget allowances
- Completeness of budget documentation, records, and schedules
- Degree of participation by managers and workers
- Quality of supportive data
- The degree of subjectivity involved.

BUDGET CALENDAR

The budget planning calendar is the schedule of activities for the development and adoption of the budget. It should include a list of dates indicating when specific information is to be provided by each information source to others. A budget calendar should be prepared for the timing of each aspect or operation of the budget. A timetable must be given to operating managers to submit their proposed budgets so the overall company budget may be prepared on time. The schedule of due dates for documents and reports must be adhered to. Review and approval dates should also be specified. The schedule dates should be realistic and attainable.

A company can begin the process by issuing the Budget Preparation Calendar consisting of an overall review of each sequential step in the budgeting process. Accompanying this is a rough time schedule in which the budgeting process will be implemented identifying deadlines, the personnel responsible, and those to receive this information. The plan furnishes the structure of the budgeting process and the overall objectives. These items are crucial for the budgeting process and must be completed before the process can proceed. An illustrative budget calendar for a company is presented in Exhibit 6.

EXHIBIT 6
ABC COMPANY BUDGET PREPARATION CALENDAR FISCAL 20X2

1. *General Guidelines* issued to Senior Management Staff by President gives the broad objectives of the company for the ensuing year. These objectives must be specific enough to provide divisions with adequate direction and yet they should be broad enough so as not to prevent creativity. General indication of gross margins, operating profit, net profit and productivity are some of the areas to be addressed.
2. *New Products Forecast* will provide an indication of new/improved products to be available next year. This will include estimated availability dates and likely segment as applicable.
3. *Discussion of Action Plans* with particular emphasis on how to achieve objectives (on individual basis) with Senior Management by President. Each Senior Vice President will produce in writing and justify in detail how he will achieve the objectives for next year. For example, Sales and Marketing should give expected sales by Regions supported by level of sales force and related promotional expenses (advertising/conventions and product giveaway).

(a) *Headcount* by department/division to support objectives must be justified by each Senior Vice President.

(b) *C.E. Projections* outline the major projects to be executed in the budget year as determined by the Department Managers and Facilities Engineering. Projects should be ranked in order of priority with pros and cons of doing and not doing the projects.

(c) *Inventory Projections* as furnished by Vice President of respective user department (Film, Chemistry, and Equipment) should indicate the levels of the inventory by major product lines. Where applicable, a minimum, desired and maximum levels to support production and sales should be given.

4. *Fringe* Benefits Package including payroll increase prepared by the Human Resources Department should outline the basis of the company's contribution of the major programs and fringes. Both quantitative and qualitative factors should be presented. Major areas to be covered are incentives, medical, dental, retirement, life insurance and workmen's compensation. Other expenditures such as FICA and unemployment tax will be computed by Corporate Planning.

5. *Budget Package* issued to departmental managers by Corporate Planning contains the necessary forms and instructions to prepare the Budget.

6. *Preliminary Profit &Loss (P&L) Fiscal 20x2* based on sales forecast and assumptions in 2-4 will be prepared by Corporate Planning. This will give an indication of the likely outcome of the actions contemplated. Major directions and proactive measures will then be taken to manage the budget process in line with the President's guidelines.

7. *Final Sales Forecast* as issued to Senior Management Staff by Sales/Marketing would give sales volume and dollars by major product lines. For example, film and paper *(*sq. ft. & $), chemistry (quantity & S) and equipment (unit & $). Film and paper should be analyzed by Region, International, Dealers, National Accounts and Others. New products should be clearly identified. Adequate explanation should be given for any significant changes (over the current year) in volume or price.

8. *Departmental Expense Budgets* are prepared (monthly basis) by department managers and approved by their respective Senior Management. These include all the operating expenses (excluding payroll, fringes, depreciation and facilities cost) as prepared in the Basic Budget Worksheet.

9. *Preliminary Budget* incorporate data and payroll, fringes, depreciation and facilities cost as computed by Corporate Planning. The preliminary data is returned to managers for review and any necessary changes.

10. *Revisions* made by managers to preliminary budget are sent to Corporate Planning on a timely basis.

11-13. *Budgets* are sent to Senior Vice President and meetings are held to review budgets. Senior Vice Presidents will present their budgets and negotiate the necessary changes to bring budgets in line with corporate objectives.

14. *Preparation of Budgeted P&L, Cash Flow, Balance Sheet* by Corporate Planning and Finance Division. This will provide Management with the financial picture of the budget year.

15-16. *Budget Package* sent to Senior Management for review and approval prior to presentation to ABC Company.

17. *Presentation of Budget Package* by Corporate Planning and President to ABC Company for approval.

18. *Approved Budgets* issued to respective departments. These will form the guide as to the upper limit of expenditures for the coming year.

CHAPTER 5
COST BEHAVIOR:
EMPHASIS ON FLEXIBLE BUDGETS AND CONTRIBUTION MARGIN

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define and give examples of variable costs, fixed costs, and mixed costs
- Explain two methods of developing a flexible budget formula: the high-low method and regression analysis
- Explain the advantages and disadvantages of the high-low method for developing a flexible budget formula
- Develop the formula using the high-low method
- Describe the advantages of regression analysis
- Utilize a spreadsheet program such as *MS Excel* to develop the flexible budget formula.
- Prepare a flexible budget
- Distinguish between the terms *gross margin* and *contribution margin*
- Explain why the contribution income statement is useful for managers

Not all costs behave in the same way. There are certain costs that vary in proportion to changes in volume or activity, such as labor hours and machine hours. There are other costs that do not change even though volume changes. An understanding of cost behavior is helpful to managers as follows:

1. Flexible budgeting
2. Contribution margin analysis
3. Appraisal of divisional performance

COSTS BY BEHAVIOR

Depending on how a cost will react or respond to changes in the level of activity, costs may be viewed as variable, fixed, or mixed (semi-variable). This classification is made within a specified range of activity, called the relevant range. The relevant range is the volume zone within which the behavior of variable costs, fixed costs, and selling prices can be predicted with reasonable accuracy.

VARIABLE COSTS. Variable costs, also known as *engineered costs*, vary in total with changes in volume or level of activity. Examples of variable costs include the costs of direct materials, direct labor, and sales commissions. The following factory overhead items fall in the variable cost category:

Variable Factory Overhead

Supplies	Receiving Costs
Fuel and Power	Overtime Premium
Spoilage and Defective Work	

FIXED COSTS. Fixed costs do not change in total regardless of the volume or level of activity. Examples include advertising expense, salaries, and depreciation. The following factory overhead items fall in the fixed cost category:

Fixed Factory Overhead

Property Taxes	Rent on Factory Building
Depreciation	Indirect labor
Insurance	Patent Amortization

MIXED (SEMI-VARIABLE) COSTS. As previously discussed, mixed costs contain both a fixed element and a variable one. Salespersons' compensation including salary and commission is an example. The following factory overhead items may be considered mixed costs:

Mixed Factory Overhead

Supervision	Maintenance and Repairs
Inspection	Workmen’s Compensation Insurance
Service Department costs	Employer's Payroll Taxes
Utilities	Rental of Delivery Truck
Fringe Benefits	Quality Costs
Cleanup costs	

Note that factory overhead, taken as a whole, would be a perfect example of mixed costs. Exhibit 1 displays how each of these three types of costs varies with changes in volume.

ANALYSIS OF MIXED (SEMI-VARIABLE) COSTS

For planning, control, and decision making purposes, mixed costs need to be separated into their variable and fixed components. Since the mixed costs contain both fixed and variable elements, the analysis takes the following mathematical form, which is called a *flexible budget formula*:

$$Y = a + bX$$

where Y = the mixed cost to be broken up (dependent variable).

X = any given measure of activity (cost driver) such as direct labor hours, machine hours, or production volume (independent variable).

a = the fixed cost component (constant).

b = the variable rate per unit of X (slope).

Relevant Range

Management quite often use the notion of relevant range in estimating cost behavior. The relevant range is the range of activity over which the company expects a set of cost behaviors to be consistent (or linear). For example, if the relevant range of activity is between 10,000 and

20,000 units of cars, the auto maker assumes that certain costs are fixed and while others are variable within that range.

Separating the mixed cost into its fixed and variable components is the same thing as estimating the parameter values a and b in the flexible budget formula. There are several methods available to be used for this purpose including the high-low method and the least-squares method (regression analysis). They are discussed below.

THE HIGH-LOW METHOD

The high-low method, as the name indicates, uses two extreme data points to determine the values of a (the fixed cost portion) and b (the variable rate) in the equation Y = a + bX. The extreme data points are the highest representative X-Y pair and the lowest representative X-Y pair. The activity level X, rather than the mixed cost item y, governs their selection.

The high-low method is explained, step by step, as follows:

Step 1 Select the highest pair and the lowest pair
Step 2 Compute the variable rate, b, using the formula:

$$\text{Variable rate} = \frac{\text{Difference in cost Y}}{\text{Difference in activity X}}$$

Step 3 Compute the fixed cost portion as:

Fixed cost portion = Total mixed cost - Variable cost (or a = Y – bX)

EXAMPLE 1
Flexible Manufacturing Company decided to relate total factory overhead costs to direct labor hours (DLH) to develop a cost function in the form of Y = a + b X. Twelve monthly observations are collected. They are given below.

Month	*Direct Labor Hours (X)*		*Factory Overhead (Y)*
January	105	Hours	$ 2,510
February	100		2479
March	88		2080
April	116		2750
May	95		2330
June	107		2690
July	97		2480

August	110	2610
September	135	2920
October	115	2730
November	117	2760
December	96	2109

The high-low points selected from the monthly observations are

	X	*Y*
High	135 hours	$2920 (September pair)
Low	88	2080 (March pair)
Difference	47 hours	$840

$$\text{Variable rate b} = \frac{\text{Difference in Y}}{\text{Difference in X}} = \frac{\$840}{47 \text{ hours}} = \$17.8723 \text{ per DLH}$$

The fixed cost portion is computed as:

	High	*Low*
Factory overhead (Y)	$2920	$2080
Variable expense ($17.8723 per DLH)	(2412.76)*	(1572.76)*
	507.234	507.234

*$17.8723 x 135hours = $2412.76; $17.8723 x 88 hours = $1572.76

Therefore, the flexible budget formula for factory overhead is

$507.234 fixed plus $17.8723 per DLH.

The high-low method is simple and easy to use. It has the disadvantage, however, of using two extreme data points, which may not be representative of normal conditions. The method may yield unreliable estimates of a and b in our formula. In this example, the negative value for a is questionable. In such a case, it would be wise to drop them and choose two other points that are more representative of normal situations. Be sure to check the scatter diagram for this possibility.

REGRESSION ANALYSIS

One popular method for estimating the cost function is regression analysis. Unlike the high-low method, in an effort to estimate the variable rate and the fixed cost portion, the regression method includes all the observed data and attempts to find a line of best fit.

From the regression output of Excel, as shown below, the flexible budget formula is

$$Y = 566.02 + 18.47 X \text{ with } R^2 = 82.58\%$$

or $566.02 fixed, plus $18.47 per DLH

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9087524
R Square	0.825831
Adjusted R Square	0.808414
Standard Error	114.29182
Observations	12

ANOVA

	df	*SS*
Regression	1	619370.4611
Residual	10	130626.2056
Total	11	749996.6667

	Coefficients	*Standard Error*
Intercept	566.02156	288.1776914
Direct labor hours (x)	18.466621	2.681805902

Note: R^2 tells us how good the estimated regression equation is. In other words, it is a measure of "goodness of fit" in the regression. Therefore, the higher the R^2, the more confidence we have in our flexible budget formula.

EXAMPLE 2
Assume 95 direct labor hours are to be expended next year. The projected factory overhead for next year would be computed as follows:

$$Y = 566.02 + 18.47\ X = 566.02 + 18.47\ (95)$$
$$= \$566.02 + \$1754.65 = \$2320.67$$

FIXED BUDGETS VERSUS FLEXIBLE BUDGETS AND PERFORMANCE REPORTS
A fixed (static) budget presents budgeted amounts at the expected capacity level. It is best used when the department's activities (e.g., sales) are stable. A deficiency with the static budget is the lack of flexibility to adjust to unexpected changes.

The fixed budget is suitable for a department whose workload does not have a direct relationship to sales, production, or other volume related to a department's operations. The workload is primarily determined by management decision instead of sales volume. Some examples of departments in this category are administrative and marketing. Fixed budgets may be used for projects involving fixed appropriations for specific programs such as capital expenditures, advertising and promotion, and major repairs.

Exhibit 1 illustrates a static budget.

Exhibit 1
X-Ray Unit
Medical Service Corporation
Performance Report - Static Budget
May 20x2

	Master budget	*Actual*	*Variance*	
Units	2,000	1,200	800	
Sales revenue	$60,000	$36,000	$24,000	*
Variable costs:				
Film	16,000	11,500	4,500	+
Other material	4,000	3,000	1,000	+
Technician	3,000	2,500	500	+
Other labor	900	600	300	+
Other variable	2,400	2,000	400	+
Total variable	26,300	19,600	6,700	+
Contribution margin	33,700	16,400	17,300	*
Fixed costs:				
Rent	800	800	0	
Depreciation	400	400	0	
Supervision	2,000	2,000	0	
Other fixed	3,500	3,300	200	+
Total fixed	6,700	6,500	200	+
Operating income	27,000	9,900	17,100	*

+Favorable.
*Unfavorable

A flexible budget is a tool that is extremely useful in cost control. In contrast to a static budget, the flexible budget is characterized as follows:

1. It is geared toward a range of activity rather than a single level of activity.
2. It is dynamic in nature rather than static. By using the flexible budget formula, a series of budgets can be easily developed for various levels of activity.

The steps involved in the case of a flexible budget are:

1. Estimate the range of expected activity for the period.
2. Analyze cost behavior trends, whether fixed, variable, or mixed.
3. Separate costs by behavior, i.e., breakup mixed costs into variable and fixed. .
4. Determine what costs will be incurred at different levels of activity.

The static (fixed) budget is geared for only one level of activity and has problems in cost control. Flexible budgeting distinguishes between fixed and variable costs, thus allowing for a budget that can be automatically adjusted (via changes in variable cost totals) to the particular level of activity actually attained. Thus, variances between actual costs and budgeted costs are adjusted for volume ups and downs before differences due to price and quantity factors are computed. The primary use of the flexible budget is to accurately measure performance by comparing actual costs for a given output with the budgeted costs for the same level of output. *Note:* A flexible budget is appropriate for marketing budgets as well as for manufacturing cost budgets.

Exhibit 2 presents a flexible budget. Exhibit 3 illustrates a performance report showing variances.

Exhibit 2
X-Ray Unit
Medical Service Corporation
Flexible Budget
May 20x2

		Number of x-rays per month				
	Budgeted Per unit	*1000*	*1200*	*1400*	*1800*	*2000*
Sales revenue	$30.00	$30,000	$36,000	$42,000	$54,000	$60,000
Variable costs:						
Film	8.00	8,000	9,600	11,200	14,400	16,000
Other material	2.00	2,000	2,400	2,800	3,600	4,000
Technician	1.50	1,500	1,800	2,100	2,700	3,000
Other labor	0.45	450	540	630	810	900
Other variable	1.20	1,200	1,440	1,680	2,160	2,400
Total variable costs	13.15	13,150	15,780	18,410	23,670	26,300
Contribution margin	16.85	16,850	20,220	23,590	30,330	33,700
Fixed costs:						
Rent		800	800	800	800	800
Depreciation		400	400	400	400	400
Supervision		2,000	2,000	2,000	2,000	2,000
Other fixed		3,500	3,500	3,500	3,500	3,500
Total fixed costs		6,700	6,700	6,700	6,700	6,700
Operation income		10,150	13,520	16,890	23,630	27,000

Exhibit 3
X-Ray Unit
Medical Service Corporation
Performance Report - Flexible Budget
May 20x2

Units	*Costs incurred*	*Flexible budget*	*Variance explanation*	
Units	1,200	1,200	0	
Sales revenue	$36,000	$36,000	0	
Variable cost:				
Film	11,500	9,600	1,900	*
Other material	3,000	2,400	600	*
Technician	2,500	1,800	700	*
Other labor	600	540	60	*
Other variable	2,000	1,440	560	*
Total variable costs	19,600	15,780	3,820	*
Contribution margin	16,400	20,220	3,820	*
Fixed costs:				
Rent	800	800	0	
Depreciation	400	400	0	
Supervision	2,000	2,000	0	
Other fixed	3,300	3,500	200	+
Total fixed costs	6,500	6,700	200	+
Operation income	9,900	13,520	3,620	*

*Unfavorable
+Favorable

EXAMPLE 3

Assume that the Assembly Department of Omnis Industries, Inc. is budgeted to produce 6,000 units during June. Assume further that the company was able to produce only 5,800 units. The budget for direct labor and variable overhead costs is as follows:

OMNIS INDUSTRIES, INC.

The Direct Labor and Variable Overhead Budget
Assembly Department
For the Month of June

Budgeted production	6,000 units
Actual production	5,800 units

Direct labor	$39,000
Variable overhead costs:	
Indirect labor	6,000
Supplies	900
Repairs	300
	$46,200

If a static budget approach is used the performance report will appear as follows:

OMNIS INDUSTRIES, INC.

Direct Labor and Variable Overhead
Static Budget Versus Actual
Assembly Department
For the Month of June

	Budget	Actual*	Variance (U or F)**
Production in units	6,000	5,800	200U
Direct labor	$39,000	$38,500	$500F
Variable overhead costs:			
Indirect labor	6,000	5,950	50F
Supplies	900	870	30F
Repairs	300	295	5F
	$46,200	$45,615	$585F

*Given.

**A variance represents the deviation of actual cost from the standard or budgeted cost. U and F stand for "unfavorable" and "favorable," respectively.

These cost variances are useless, in that they are comparing oranges with apples. The problem is that the budget costs are based on an activity level of 6,000 units, whereas the actual costs were incurred at an activity level below this (5,800 units).

From a control standpoint, it makes no sense to try to compare costs at one activity level with costs at a different activity level. Such comparisons would make a production manager look good as long as the actual production is less than the budgeted production. Using the flexible budget formula and generating the budget based on the 5,800 actual units gives the following performance report:

OMNIS INDUSTRIES, INC.

Performance Report
Assembly Department
Flexible Budget Versus Actual
For the Month of June

Budgeted production		6,000 units
Actual production		5,800 units

	Flexible budget formula	Flexible Budget 5,800 units	Actual 5,800 units	Variance (U or F)
Direct labor	$6.50 per unit	$37,700	$38,500	$800U
Variable overhead:				
Indirect labor	1.00	5,800	5,950	150U
Supplies	0.15	870	870	0
Repairs	0.05	290	295	5U
	$7.70	$44,660	$45,615	$955U

Notice that all cost variances are unfavorable (U), as compared to the favorable cost variances on the performance report based on the static budget approach.

THE CONTRIBUTION INCOME STATEMENT

The traditional income statement for external reporting shows the functional classification of costs, that is, manufacturing costs vs. non-manufacturing expenses (or operating expenses). An alternative format of income statement, known as the *contribution income statement*, organizes the costs by behavior rather than by function. It shows the relationship of variable costs and fixed costs a given cost item is associated with, regardless of the functions.

The contribution approach to income determination provides data that are useful for managerial planning and decision making. For example, the contribution approach is useful:

(1) For break-even and cost-volume-profit analysis,
(2) In evaluating the performance of the division and its manager, and
(3) For short-term and non-routine decisions.

The contribution income statement is not acceptable, however, for income tax or external reporting purposes because it ignores fixed overhead as a product cost. The statement highlights the concept of contribution margin, which is the difference between sales and variable costs. The traditional format, on the other hand, emphasizes the concept of gross margin, which is the difference between sales and cost of goods sold.

These two concepts are independent and have nothing to do with each other. Gross margin is available to cover non-manufacturing expenses, whereas contribution margin is available to cover fixed costs. The concept of contribution margin has numerous applications for internal management.

A comparison is made between the traditional format and the contribution format below.

TRADITIONAL FORMAT

Sales		$15,000
Less: Cost of Goods Sold		7,000
Gross Margin		8,000
Selling	$2,100	
Administrative	1,500	3,600
Net Income		$4,400

CONTRIBUTION FORMAT

Sales		$15,000
Less: Variable Expenses		
Manufacturing	$4,000	
Selling	1,600	
Administrative	500	6,100
Contribution Margin		8,900
Less: Fixed Expenses		
Manufacturing	$3,000	
Selling	500	
Administrative	1,000	4,500
Net Income		$4,400

CONCLUSION

Managers must investigate cost behavior for appraisal of managerial performance, and for flexible budgeting. We have looked at three types of cost behavior--variable, fixed, and mixed. We illustrated two popular methods of separating mixed costs in their variable and fixed components: the high-low method and regression analysis. Emphasis was placed on the use of simple regression. The idea of flexible budgeting was emphasized in an attempt to correctly measure the efficiency of the cost center (e.g., assembly department).

CHAPTER 6
RESPONSIBILITY ACCOUNTING AND REPORTING TO MANAGEMENT

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define *responsibility accounting* and appreciate how important it is for managerial control
- Distinguish among three types of responsibility centers and see how they are evaluated
- Explain what cost control involves
- Identify the types of reports necessary for effective responsibility accounting
- Compare conventional accounting and responsibility accounting

Responsibility accounting is the system for collecting and reporting revenue and cost information by areas of responsibility. It operates on the premise that managers should be held responsible for their performance, the performance of their subordinates, and all activities within their responsibility center. Responsibility accounting, also called *profitability accounting* and *activity accounting*, has the following advantages:

1. It facilitates delegation of decision making.
2. It helps management promote the concept of management by objective. In management by objective, managers agree on a set of goals. The manager's performance is then evaluated based on his or her attainment of these goals.
3. It provides a guide to the evaluation of performance and helps to establish standards of performance, which are then used for comparison purposes.
4. It permits effective use of the concept of management by exception, which means that the manager's attention is concentrated on the important deviations from standards and budgets.

RESPONSIBILITY ACCOUNTING AND RESPONSIBILITY CENTER

For an effective responsibility accounting system, the following three basic conditions are necessary:

(a) The organization structure must be well defined. Management responsibility and authority must go hand in hand at all levels and must be clearly established and understood.
(b) Standards of performance in revenues, costs, and investments must be properly determined and well defined.
(c) The responsibility accounting reports (or performance reports) should include only items that are controllable by the manager of the responsibility center. Also, they should highlight items calling for managerial attention.

A well-designed responsibility accounting system establishes responsibility centers within the organization. A responsibility center is defined as a unit in the organization, which has control over costs, revenues, and/or investment funds. Responsibility centers can be one of the following types:

Cost center. A cost center is the unit within the organization which is responsible only for costs. Examples include production and maintenance departments of a manufacturing company.

Variance analysis based on standard costs and flexible budgets would be a typical performance measure of a cost center.

Profit center. A profit center is the unit which is held responsible for the revenues earned and costs incurred in that center. Examples might include a sales office of a publishing company, and appliance department in a retail store, and an auto repair center in a department store. The *contribution approach* to cost allocation is widely used to measure the performance of a profit center.

Investment center. An investment center is the unit within the organization which is held responsible for the costs, revenues, and related investments made in that center. The corporate headquarters or division in a large decentralized organization would be an example of an investment center.

Exhibit 1 depicts responsibility accounting at various levels.

COST CENTER CONTROL

Faced with a situation in which increases in expenses cannot be covered by higher selling prices, management must turn to cost control or, better yet, cost reduction. Of the two, cost reduction is the more difficult to achieve. Cost control may be defined as keeping expenditures within prescribed limits. Cost reduction is an attempt to bring costs down, in some cases by eliminating waste and inefficiency and in others by major changes in product content and operating methods.

In this chapter, we shall be concerned with an accounting system designed to control costs by relating expenditures to the people responsible for their incurrence. We shall find no change in the basic accounting concepts applied; we shall, however, note an entirely different approach to cost accumulation with a shift in emphasis from product costing to responsibility accounting.

PREREQUISITES OF COST CONTROL

Costs do not control themselves. To the contrary, experience shows that they will rise if left unchecked. Nor will a system, no matter how well constructed, in itself keep expenses within bounds. People spend the money and it is the people who must be held accountable for the expenditures. The system must be built around people, and the system must take into account the fact that people react as human beings, not as machines.

Essential to effective cost control are the following:

1. Delegation of authority and assignment of responsibility for cost incurrence
2. A plan that sets up objectives and goals to be achieved
3. Motivation to encourage individuals to reach the goals set up
4. Timely reporting and instructive analyses of differences between goals and

performances—designed not only to fix responsibility but also to point out reasons

5. Corrective action to prevent a recurrence of unfavorable differences
6. A system of follow-up to insure that corrective measures are being effectively applied

Note: An effective control system should be meaningful. Therefore, controls should be in a place to measure performance only in important areas. Excessive controls in minor areas are not economical because the added benefits do not outweigh the loss of time and money.

EXHIBIT 1

Responsibility Accounting at Various Levels
(in thousands)

Northern California District Manager Monthly Responsibility Report Operating income of branches and district manager office expense:	*Budget*		*Variance: Favorable (Unfavorable)*	
	This Month	*Year to Date*	*This Month*	*Year to Date*
District manager office expense	-145	-605	-8	-20
Berkeley branch	475	1728	-3	-11
Palo Alto branch	500	1800	19	90
Oakland Branch	310	1220	31	110
others	600	2560	47	130
Operating income	1740	6703	86	299

Berkeley Branch Manager Monthly Responsibility Report Operating income of stores and branch manager office expense:	*Budget*		Variance: Favorable *(Unfavorable)*	
	This Month	*Year to Date*	*This Month*	*Year to Date*
Branch manager office expense	-20	-306	-5	4
Store X	48	148	-1	-5
Store Y	64	226	9	9
Store Z	38	160	4	10
Others	345	1500	-10	-29
Operating income	475	1728	-3	-11

Store Y Manager Monthly Responsibility Report Sales and Expenses:	*Budget*		*Variance: Favorable (Unfavorable)*	
	This Month	*Year to Date*	*This Month*	*Year to Date*
Sales	170	690	8	12
Food expense	40	198	5	14
Supplies	15	62	-3	-2
Payroll	24	98	-4	-5
Repairs & Maintenance	5	21	1	-2
General	12	45	-	-2
Depreciation	10	40	-	-
Total expenses	106	464	-1	3
Operating income	64	226	9	9

RESPONSIBILITY AND CONVENTIONAL ACCOUNTING COMPARED

Responsibility accounting introduces no new accounting techniques; it merely shifts the emphasis from the collection of data for purposes of product costing and financial reporting to collection of data in order to place responsibility for cost incurrence on the managers for cost control. In short, it focuses attention on people, not things.

In financial accounting, costs are classified by functions—manufacturing, selling, administrative—and the basic problem is a division between product costs and period costs. Under responsibility accounting, attention is directed toward individuals and the basic question is who spent the money rather than what the money was spent for. For example, the concern is not how rent should be allocated among the various producing departments but rather who signed the lease. In financial accounting, accounting data must be revised and reclassified if they are to be used in cost control. In responsibility accounting, the situation is reversed; data collected for control are reclassified for product costing. Higgins states the need for responsibility accounting and outlines its operations as follows:

There are three major objectives of cost accounting in manufacturing companies: (1) cost control; (2) product cost; (3) inventory pricing. The cost systems of most companies meet the last two objectives, but for the most part fall on their faces when it comes to the objective of real cost control. Practically all of them have systems that emphasize the development of product cost rather than emphasizing the controlling of costs at the centers where the costs are incurred. Under responsibility accounting it is possible to meet all three of these objectives by first summarizing cost on the basis of "who did it" and then reshuffling the deck, so to speak, or blending the costs to arrive at product cost and cost for inventory pricing. In effect, what we are doing is putting the emphasis on the objective of cost control for the purposes of management reports but also arriving at the normal cost statements—but on a greatly deemphasized basis.

COST CONTROLLABILITY

Successful operation of responsibility accounting rests on two premises:

1. All spending is subject to control.
2. Responsibility for spending can be fairly fixed.

The theory is easier to state than to put into practice. Cost controllability cannot be stated in the absolute; it is a matter of degree bounded by the level of authority and time. It is not that some costs are clearly controllable and others are definitely noncontrollable, but rather that some costs are harder to control; all costs are controllable at some level at some time. The supervisor of a producing department, who does not determine how many machines will be installed in the producing department, can not exercise control over such expenditures as insurance and taxes; at a higher level, there is an executive who can authorize a reduction.

Rent, which is fixed by contract, may be unalterable for a specified period of time but it is subject to change at the expiration of the period. It is obviously fallacious to presume that *oil* costs classified as nonvariable are uncontrollable. Some costs that do not fluctuate with volume can be eliminated on a moment's notice if circumstances dictate.

ORGANIZATION STRUCTURE

As an enterprise grows and becomes too large for effective control by one person, management

must be delegated to more and more people. An organization structure that clearly defines the duties, authority, and responsibilities of the various managers replaces close personal supervision. As management becomes more complex, control is weakened unless the structure is sound.

Organization structures are too varied to permit generalization. Companies differ so widely in their objectives, philosophy, and personnel that no single form of organization can be described. Suffice it to say that the organization structure must be fitted to each individual company and the people who operate it, with particular regard for the people. Two essential points can be made, however:

1. Clear-cut lines of responsibility and authority must be drawn.
2. Responsibility must be coupled with commensurate authority.

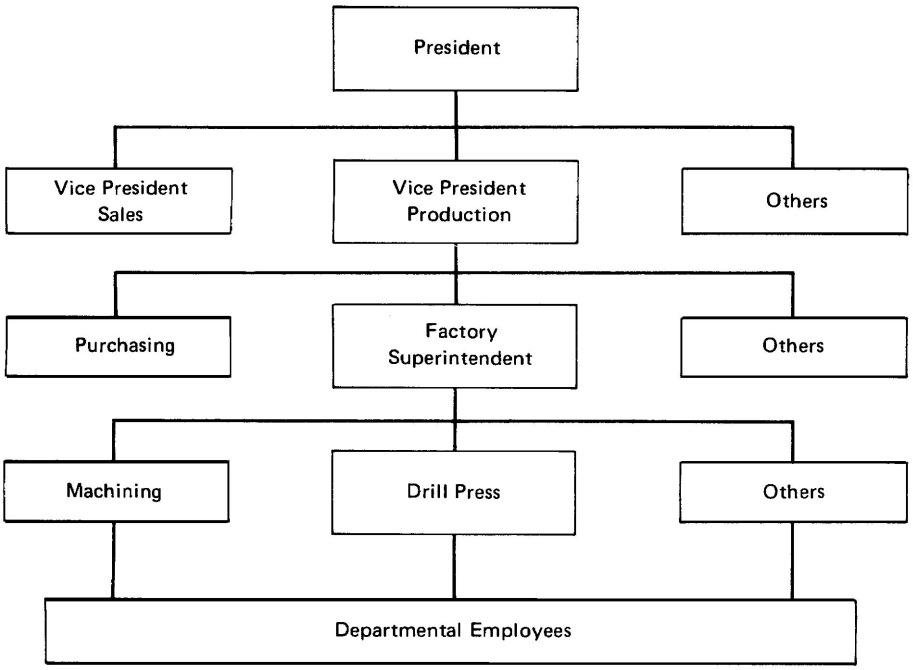
Neither point needs elaboration. It is obvious that fuzzy lines of authority can bring only bickering and buck passing, and surely no one can fairly be held accountable for something beyond his control.

Lines of authority and responsibility are usually summarized on an organization chart with specific duties described in more detail in accompanying procedure manuals. An organization chart of a small manufacturing company is shown in Exhibit 2. Drawn to illustrate the recording of costs under responsibility accounting rather than management principles, the chart is oversimplified, combining several departments under the general heading of “Others.”

OPERATION OF RESPONSIBILITY ACCOUNTING SYSTEM

It is fundamental to control that an organization structure clearly delineates lines of responsibility and grants authority requisite to the responsibility assigned. A basic requirement for responsibility accounting is the construction of a personalized chart of accounts tailored to fit the organization structure. It is essential that accounting adapt its reporting to the organization; there is no reason why the organization should have to adjust to the accounting reports. If the structure is sound, no serious problems should arise in setting up the accounts. If the structure is weak, with such defects as crosslines of authority, changes may be in order, since it is essential that the organization chart and the chart of accounts mesh. It is interesting to note in passing that the initial installation of responsibility accounting has, in some instances, brought to light organizational faults that had to be corrected before the chart of accounts could be made up. A definite assignment of cost responsibility tolerates no “gray areas.” Difficult though the decision may be, the classification is either white or black; there is no in-between.

EXHIBIT 2
ORGANIZATION CHART



Costs are collected by responsibility centers and at regular intervals (daily for some items) each individual charged with responsibility receives a report of his performance. Performance reports are then assembled by responsibility levels following the lines of authority set up in the organization chart. At each level, expenditures of the subordinates under each executive's jurisdiction are added to the direct costs incurred by that executive. Eventually, all costs are assigned to the top executive.

A system of reporting set up for the organization chart in Exhibit 1 is diagrammed, in simplified form, in Exhibit 2. At Level 1, the Drill Press in the illustration, the controllable expenses (in practice, variances would also be included) are reported to the foreman in charge. Similar reports would be prepared for all departments under the jurisdiction of the factory superintendent—machining, assembling, etc. Totals of the operating departments are entered on the cost summary of the factory superintendent along with the superintendent's office total at Level 2. In turn, the vice president in charge of production collects totals from subordinates (factory superintendent, production control, purchasing, etc.) and combines them with the vice president's office total at Level 3. Finally, all cost reports are consolidated at the top, Level 4.

Note how summary totals replace detailed information as the reports move up.
The cost summaries illustrated show only the costs controllable by the department heads. Some companies would also include the noncontrollable costs allocated to the department. Individuals disagree on whether there is merit in showing noncontrollable items.

HUMAN RELATIONS IN RESPONSIBILITY ACCOUNTING

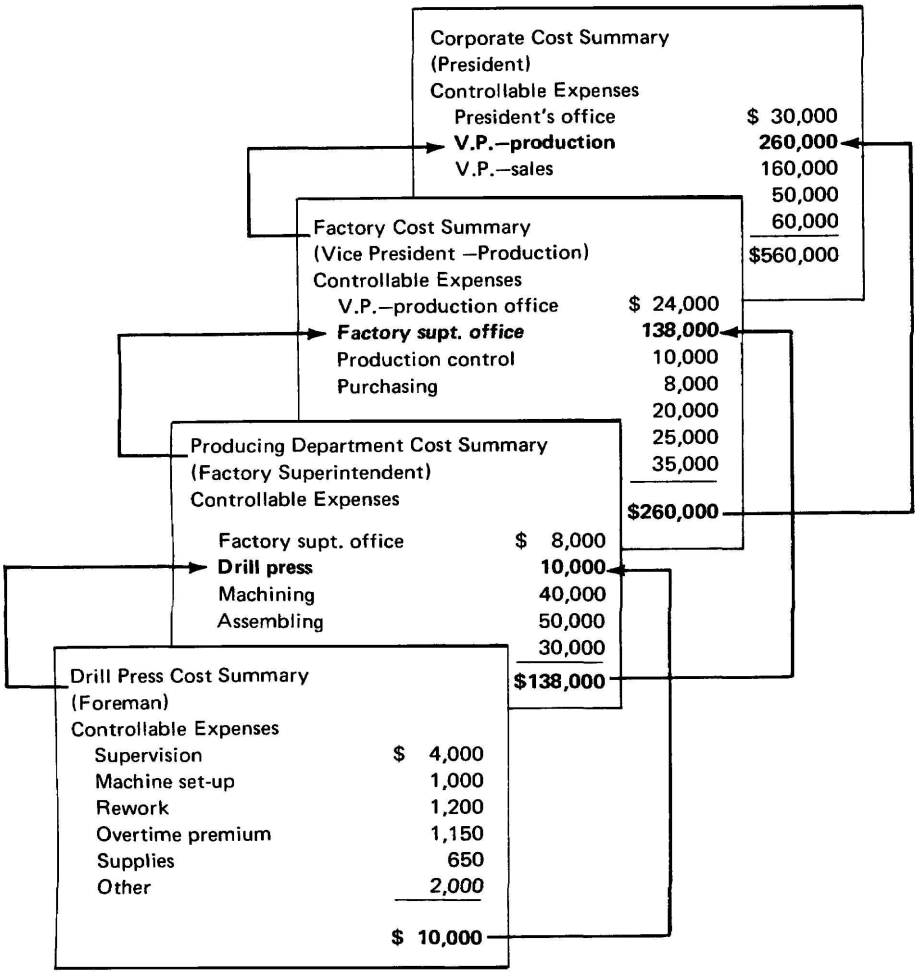
Conceptually, responsibility accounting is an ideal system to insure cost control. Putting the concept into practice is extremely difficult and fraught with danger. Like every other procedure designed to measure performances, it faces resistance, passive if not active, and unless it is soundly conceived and judiciously applied, it may defeat its own purpose. It cannot ignore the personal reactions of the people who are involved.

No system will work satisfactorily unless the individuals concerned cooperate to achieve the desired objective. Cooperation is principally a matter of acceptance. Acceptance of any form of restraint is unlikely unless those who will be affected actively participate in setting up the measures. Ideally, each participant will feel predominantly instrumental in, and thereby committed to, the final decision. This, of course, is too much to ask. As a compromise, one can hope that all participants accept it as desirable, reasonable, and fair.
Always present is the danger that responsibility accounting rigidly enforced without regard for its limitations will lead to wrong actions. It is. expected that any manager will place personal well-being ahead of the company's best interests. To avoid an unfavorable variance, a supervisor may postpone needed maintenance and repair on machinery, cut corners, or tolerate inefficiency in the hopes that it will not be discovered or that some later department will have to bear the blame. Once again we have a situation in which human relations come to the fore. Other problems related to responsibility accounting are discussed below in connection with reporting.

REPORTING UNDER RESPONSIBILITY ACCOUNTING

The successful operation of a responsibility accounting system requires good reporting. No system of cost control can succeed unless differences between planned performances and actual results can be explained and responsibility for differences fixed, nor can those charged with cost responsibility be expected to operate at a desired level of efficiency unless there is adequate feedback, which reports on performance and points out areas of deficiency when performance is substandard.

EXHIBIT 2
ASSEMBLING COSTS BY RESPONSIBILITY LEVELS



ESSENTIALS OF GOOD REPORTING

Since reports vary widely in number and content depending upon the particular needs of the firm and the people who will use them, it is impossible to generalize on how they should be prepared. We can, however, list the essentials of a good reporting system:

1. The number of reports is kept at a minimum and every report should serve a definite purpose.
2. The reporting system should be kept under constant review. Studies of company reports by outside consultants have come up with some amazing —humorous might be a better description—results. In one survey, no one in the company knew why a particular report was being prepared; the accountant who originally set it up had died. In another case, an accountant, questioning the need for a certain report, neglected to compile data for several months; no one in the organization noticed the omission until the secretary to the president tried to bring the files up to date.
3. Reports should be kept as simple as possible, containing only the essential information. To be highlighted are the exceptions that need attention. Top management has neither the

time nor the inclination to wade through the mass of detail recorded in the accounting records, nor does it need to be informed that everything is proceeding as planned. Management's interest lies in departures from the plan.

4. Reports should be tailored to the person who will use them, not to a function or a job. They are prepared for Smith or Hall, not just any supervisor in the manufacturing division, and they should be written in a language that they understand. The accountant has no right to use accounting lingo, unless speaking to another accountant.
5. Reports should be accurate, but only to the degree required for their purpose. Accuracy is relative and the attitude of the manager differs from that of the accountant. Unlike the accountant who has a fetish for accuracy, the manager is accustomed to working with approximations.
6. Reports must be timely to be of value, sometimes at the expense of accuracy. Approximations that are 95 per cent accurate and available in a hurry may be worth more than 100 per cent accuracy on a report submitted too late for action. The president of a steel company has described late reports as "having the appeal of yesterday's cold mashed potatoes."
7. Reports should do more than communicate; they should motivate. Positive in their approach and constructive rather than supercritical, they should lead to improvement. Ideally, the recipient looks upon a performance report as a useful aid to doing the job. Ever present, however, is the danger that the report will be viewed as a case of an accountant pointing out the shortcomings of others as a means of self-advancement.

Exhibit 3 is a simplified version of a cost and variance report prepared for the supervisor of an operating department. Listed on the report are the controllable costs for which that supervisor is held responsible, with variances shown for both the current period and the year to date. Opinions differ on the advisability of including noncontrollable as well as controllable costs on a departmental report. One side argues that inclusion of noncontrollable costs is contrary to the basic concept of responsibility accounting and confuses the issue. The other side contends that inclusion of a fair share of allocated costs gives the individual in charge a better appreciation of the total operating cost and leads to better cooperation in cost control. They further argue that, although not directly in control of the expenditures, the supervisor usually does exert some influence on the amount to be incurred.

FIXING RESPONSIBILITY

The person with complete jurisdiction over both the acquisition and the use of materials and services may rightfully be charged with full responsibility for cost incurrence. Situations as neat as this seldom occur. Departments are so intermingled and interdependent that it is usually impossible to draw distinct lines of separation. Cost controllability generally rests in more than one place and responsibility must be shared. The quantity and quality of raw materials may be set by an engineer; purchasing departments do the buying and determine the prices paid; producing departments are the ultimate consumers. Supervisors oversee the activities of departmental employees, usually with little or no control over hiring or firing or in setting hourly rates.

EXHIBIT 3
COST AND VARIANCE STATEMENT SHOWING
THE MACHINE SHOP OF THE ABC COMPANY

VARIANCES		NO.	ACCOUNT	ACTUAL	THIS PERIOD		
This Period	Aug. To Date			Aug. TO DATE	Ext. Budg. Allowance	Current Allowance	Actual
		100	DIRECT LABOR				
(30)	100	101	Lathe Operators	6,018		2,972	3,002
(62)	(70)	102	Punch Press Operators	5,108		2,500	2,562
(10)	74	103	Grinding Machine Operators	201		85	95
(102)	104		TOTAL DIRECT LABOR	11,327		5,557	5,659
		200	INDIRECT LABOR				
(9)	(3)	201	Supervision	1,303		650	659
(5)	4	202	Clerical	666		326	331
(370)	(702)	206	Material Handling	7,890		3,535	3,905
(120)	(192)	207	Rework	570		184	304
70	154	210	Miscellaneous Indirect Labor	407		273	203
(434)	(739)		TOTAL INDIRECT LABOR	10,836		4,968	5,402
		300	OTHER EXPENSES				
20	23	301	Direct Operating Supplies	981		488	468
60	143	302	Expense Supplies	808		462	402
80	166		TOTAL OTHER EXPENSES	1,789		950	870
(456)	(469)		GRAND TOTAL	23,952		11,475	11,931
THIS PERIOD		PRODUCTION UNIT			YEAR TO DATE		
1,960		PRODUCTION	BUDGETED UNITS		3,920		
2,058			ACTUAL UNITS		4,234		
105%		ACTIVITY (Volume) – PER CENT			108%		
96%		EFFICIENCY – PER CENT			98%		
104%		TOTAL COST RATIO			102%		
Sept. 19A PERIOD		COST CENTER MACHINE SHOP NO. 02			KEY MAN J.M. Brown		

The care exercised by a department using machinery has a bearing on the cost of maintenance and repair; what is spent on upkeep is determined elsewhere if machine maintenance is assigned to a separate department. The fixing of responsibility, then, is complex. Spoilage provides a good illustration of how responsibility can be intertwined. Excessive spoilage may result from material of an inferior grade purchased from an unknown supplier on rush order, perhaps at premium prices because a stock clerk neglected to put through a requisition in time to permit purchases from the regular source of supply. The material and usage variances that will result are apparent. Not so obvious are the other variances. Excessive spoilage can produce unfavorable labor efficiency variances and contribute to an unfavorable indirect manufacturing costs volume variance. This may be an extreme example, but it does serve to point up the difficulty of untangling cost responsibility and it does prove that the blame does not always rest in the department where the variance is initially reported. In itself, a variance does not fix responsibility; it provides only a base from which an investigation can be launched.

Difficult though the task may be, it is imperative that all variances be reported, that causes be brought to light, that responsibility be placed, and that remedial steps be taken to correct bad situations. The system will break down if individuals who lack the authority to control expenditures are charged with responsibility for their incurrence. Blaming a producing department supervisor with a variance traceable to the purchasing department does not correct a bad situation; it creates one. No definitive answers to the problem of interrelated responsibilities can be found. At best, only guidelines can be laid down and their application must be tempered by good judgment and common sense. A committee of the American Accounting Association has recommended the following:

1. The person with authority over both the acquisition and the use of the service, should be charged with the cost of such service.

2. The person who can significantly influence the amount of cost through his or her own action, may be charged with such cost.
3. Even the person who cannot significantly influence the amount of cost through direct action may be charged with those elements with which management desires that person to be concerned, so that he or she will help to influence those who are responsible.

It would seem that the third recommendation should be applied with caution. It could backfire. Whatever the ultimate solution, it should be equitable; preferably, it should be accepted, even though grudgingly, by those who will have to live with it. An equitable solution is certainly not the arbitrary use of allocations devised for product costing. Allocations have no place in responsibility accounting. Based on benefits received, they are not meant to be used in fixing cost responsibility. Cost benefits and cost control are two different things and the one cannot be used to measure the other.

SERVICE DEPARTMENT COSTS

In the case of service departments, expenditures are made in one area for the benefit of other areas and fixing responsibility for cost incurrence becomes sticky. The amount of service a department is called upon to render is determined by the demands made upon it by the various divisions utilizing the service; the expenses connected with supplying the service are incurred in the department performing the service. If operating costs are deemed to be too high, it is difficult to determine who and what are responsible. Is the reason an excessive demand for service by the recipient or excessive expenditures by the provider?

A solution commonly used in practice treats the service department as an independent unit selling its services to an outside party. Recipients are billed for services rendered at predetermined, usually standard, prices. Thus, the beneficiary is charged in accordance with the demands made for service, but is not burdened with high prices that might stem from operating inefficiencies in the service department. For example, the Machine Maintenance Department might set up standard times and standard rates and charge Department A at a standard rate per hour.

CONCLUSION

Conventional accounting procedures have long been directed toward the accumulation of data for product costs to be used in financial reporting. Responsibility accounting is a newer approach, which would shift the emphasis from the product to the people. A “personalized” chart of accounts built around the organization structure and aimed at fixing responsibility for cost incurrence would replace the chart of accounts set up on functional lines. Product costing would be secondary to cost control.

Operation of a responsibility accounting system poses a number of problems. Pinpointing responsibility for cost incurrence is difficult, since many costs are not under the exclusive control of any one person and expenditures are made in one department for benefits received by another department. Finding a fair means of assigning responsibility without creating internal dissension is not easy. Although there is no simple solution to the problem, one fact does stand out: the cost allocations made in product costing are definitely not the answer.

Essential to successful operation of responsibility accounting are reports that keep operating personnel fully informed of their performances. If they are to serve their purpose, reports must be timely and informative, instructive as well as critical, and written specifically for

the people who will read them.

CHAPTER 7
MASTER BUDGET: GENESIS OF FORECASTING AND PROFIT PLANNING

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define master budgeting.
- Diagram and explain the master budget interrelationships.
- Describe the master budget process and the steps involved in the process
- Prepare sales, production, manufacturing costs, and cash budgets.
- Develop a budgeted income statement.
- Prepare a cash budget
- Have an understanding of how budgets aid in planning and control

Budgeting is the formulation of plans, both long- and short-range, for future activity that seek to substitute carefully studied actions for hit-and-miss performances and provide measures through which deviations from planned achievements can be evaluated. The budget is the conversion, usually by segments and on a short-range basis, of plans into figures, an accounting, as it were, for the future. Budgets can be prepared only after preliminary plans have been laid down.

Profit planning is a term that is essentially synonymous with budgeting, since the ultimate objective of every business must be to operate at a profit. Master (comprehensive) budgeting is a term applied to the whole process of planning and control. It includes both the long- and short-range plans and encompasses the profit plan and the various budgets prepared for the various operating segments.

A comprehensive (master) budget is a formal statement of management's expectation regarding sales, expenses, volume, and other financial transactions of an organization for the coming period. It covers both the operating and financial budgets. The operating budget consist of all budgets that concern normal operating activities, including the sales, production, materials, direct labor, and overhead budgets. The financial budget normally includes the cash budget and the budgeted balance sheet.

Simply put, a budget is a set of *pro forma* (projected or planned) financial statements. It consists basically of a pro forma income statement, pro forma balance sheet and cash budget.

Ten typical budgets will be discussed here:

1. Sales budget
2. Production budget
3. Materials requirement budget
4. Materials purchases budget
5. Direct labor budget
6. Factory overhead costs budget
7. Selling and administrative expenses budget

8. Cash receipts budget
9. Cash disbursements budget
10. Budgeted income statement

Obviously these budgets cannot be prepared independently. Production is scheduled to meet the sales demand. Materials, labor, and factory overhead costs are related to production. Selling and administrative expenses are based on sales. Cash receipts and disbursements can be estimated only after sales revenue and costs are known. It is obvious that all of these separate budgets must be closely coordinated.

The major steps in preparing the budget are:

1. Prepare a sales forecast.
2. Determine expected production volume.
3. Estimate manufacturing costs and operating expenses.
4. Determine cash flow and other financial effects.
5. Formulate projected financial statements.

Exhibit 1 shows a simplified diagram of the various parts of the comprehensive (master) budget, the master plan of the company.

MASTER (COMPREHENSIVE) BUDGETING ILLUSTRATED

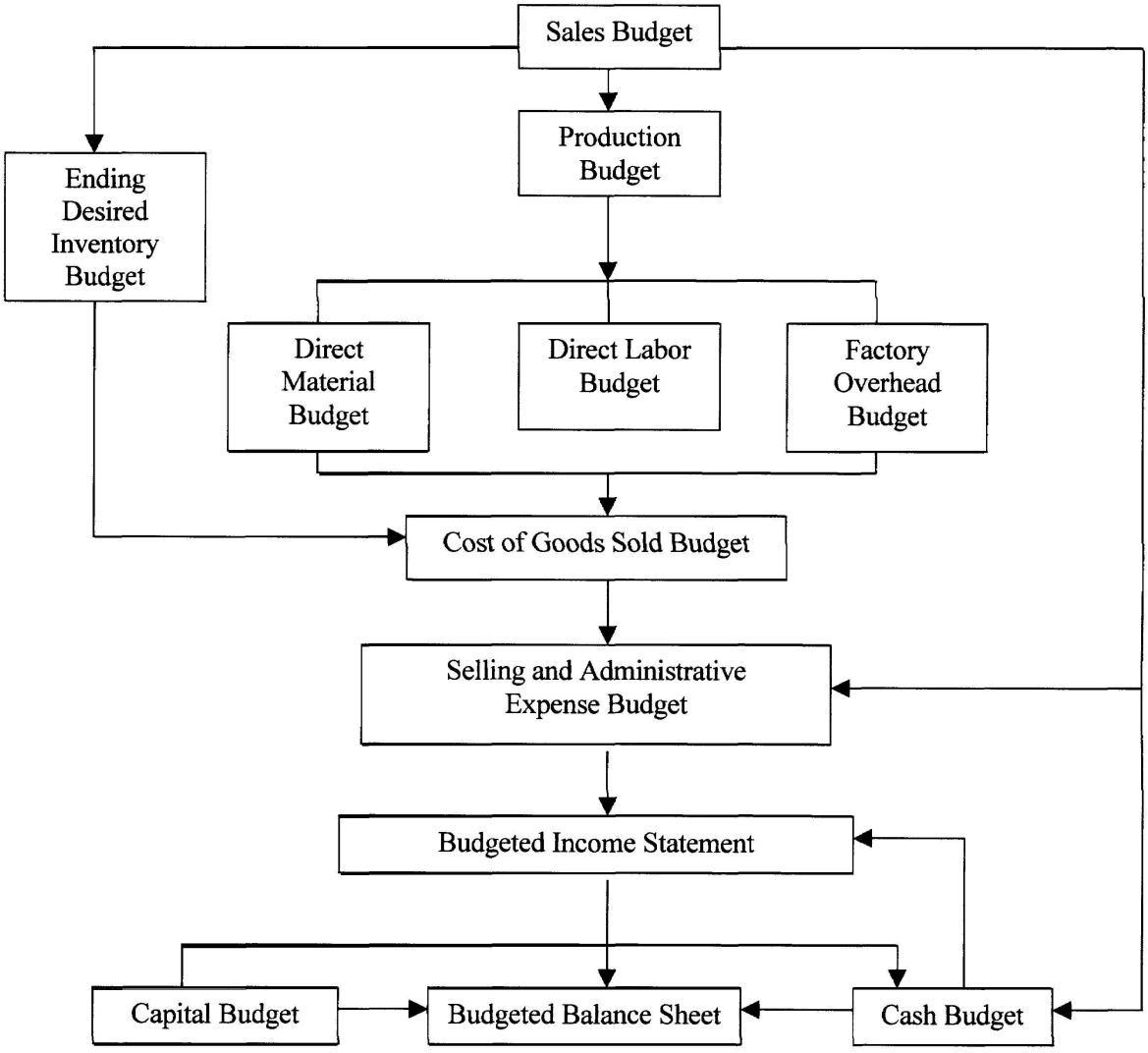
In the sections that follow, we shall trace through a simple budgeting procedure used by the JS-JK Company. Budgets are prepared quarterly under the supervision of the company controller who acts as budget director. After sales estimates have been prepared, production schedules are made up. The sales budget and the production budget are followed by individual budgets for purchases of materials, labor, factory overhead costs, selling and administrative expenses, and cash receipts and cash disbursements.

Estimates submitted by the department heads are reviewed by the budget committee. Any that are considered out of line with company objectives are sent back to the divisions for adjustment. Department heads who wish to do so may argue their cases before the budget committee. Differences that cannot be worked out between the committee and the division heads are submitted to the president of the company for final settlement.

The budget director prepares monthly income statements. At the end of each month, actual results are compared with budget estimates, and reports summarizing the variances are sent to the proper executives for action. It is company policy to account for all differences.

EXHIBIT 1

MASTER BUDGET



The following preliminary data have been collected preparatory to setting up the budget for the first quarter of 20A:

Standard unit costs for material and labor:

Material X- 2 pieces @ $1.50	$3.00	
Material Y - 1 piece @ $1.00	1.00	$4.00
Labor- 1 hr. @ $2.00		2.00

Factory overhead costs (standard capacity- 5,000 hours per month):

	Fixed per month	*Variable per hour*
Indirect labor	$1,000	$ .60
Depreciation	5,000	-
Repairs & Maintenance	200	.08
Taxes & insurance	600	-
Supplies	800	-
Heat & light	400	-
Power	-	.10
Miscellaneous	-	.22
	$8,000	$1.00

Selling and administrative expenses:

	Fixed per month	*Variable percent of sale*
Salaries	$3,000	-
Commissions on sales	-	3
Advertising	-	1
Bad Debts	-	1
Depreciation	500	-
Miscellaneous	3,500	-
	$7,000	5

Balances of January 1, 20A:

Cash	$10,000
Accounts receivable	$60,000
Allowance for doubtful accounts	$ 600
Finished goods inventory	2,000 units
Raw materials inventories:	
Material X	4,250 pieces
Material Y	2,125 pieces
Accounts payable--materials	$20,000
Accrued payroll	$ 9,000

Inventory policies:

Finished goods- the following inventories of finished goods are desired:	
January 31, 20A	2,250 units
February 28, 20A	2,500 units
March 31, 20A	2,500 units

Raw materials X and Y- delivery schedules make it advisable to maintain a monthly ending inventory equal to one-half the production requirements of the following month.

SALES BUDGET

The *sales budget* showing what products will be sold in what quantities at what prices is the foundation on which all other budgets are built. The sales budget provides the revenue predictions from which cash receipts from customers can be estimated and supplies the basic data for constructing budgets for production costs and selling and administrative expenses. In short, the sales forecast is the keystone of the budget structure. Only to the extent that sales data are accurate can other budget estimates be reliable. If the sales forecast is grossly awry, then the whole budget is distorted.

A number of methods are used in forecasting sales. The simplest approach is a compilation of estimates from sales personnel. At the other extreme are market research surveys and statistical analysis of quantitative data. A wealth of statistical data is available. Automobile manufacturers, for example, make projections based on the disposable income per family; publishers of textbooks use population statistics. To date, forecasting is an art, not a science. Answers are not derived from easy formulas. Good judgment must determine the final decision, and ultimate responsibility must rest in the sales department.

A detailed discussion of sales forecasting is beyond the scope of this text. We shall assume that the JS-JK Company has completed a market analysis and has budgeted sales for the first quarter of 20A as shown in the following sales forecast.

SALES FORECAST
FIRST QUARTER OF 20A

Month	*Units*	*Revenue*
January	4,000	$ 48,000
February	4,500	54,000
March	5,000	60,000
	13,500	$162,000

PRODUCTION BUDGET

After the sales budget has been completed, the production budget is made up. Under ideal conditions, production would be scheduled at a uniform monthly volume throughout the year, but customers' seasonal demands make ideal scheduling impossible. The most that any company

can hope to achieve is a good balance between production and inventories, keeping volume fluctuations at a minimum and holding the inventories at reasonable levels. In spite of careful planning, there are periods in which production will exceed sales and inventories will accumulate; there are other periods in which sales exceed production and inventories will be reduced. *Note:* The starting point in preparing a comprehensive budget for a manufacturing company limited by its ability to produce and not by its ability to sell is an estimate of productive capacity.

How many units will be produced in any period is contingent on the inventory of finished goods available at the beginning of the period, the sales requirements of the period, and the inventory of finished goods that is desired at the end of the period. Preliminary data have already provided the following inventory information for the JS-JK Company:

Finished goods on hand, January 1	2,000 units
Inventories needed to meet future sales requirements:	
January 31	2,250 units
February 28	2,500 units
March 31	2,500 units

With the data provided by the sales budget and the inventory summary, a production budget can be set up as shown below.

PRODUCTION BUDGET
FIRST QUARTER OF 20A

Units

	January	*February*	*March*
Sales	4,000	4,500	5,000
Add end-of-month inventory desired	2,250	2,500	2,500
Total	6,250	7.000	7,500
Deduct beginning inventory	2,000	2.250	2,500
Production required	4,250	4,750	5,000

MATERIALS REQUIREMENT BUDGET
After determining the number of units to be produced each month, the company prepared the materials requirement budget shown below.

MATERIALS REQUIREMENT BUDGET
FIRST QUARTER OF 20A

	January	*February*	*March*
Production (units)	4,250	4,750	5,000
Materials required:			
Material X-2 pieces per unit	8,500	9,500	10,000
Material Y-1 piece per unit	4,250	4,750	5,000

Purchases of materials depend on inventories and production requirements. You will recall that delivery schedules make it advisable for the JS-JK Company to maintain an inventory of raw materials equal to one-half the production requirements of the following month. Standard prices can be used in budgeting purchases only if they are expected to prevail during the budget period. In this instance, the price of Material X is expected to be $1.50 per piece; due to adverse market conditions, the price of Material Y is expected to be $1.02 per piece during January only; on February 1, the price is expected to drop back to the standard of $1.00 per piece. The materials purchase budget prepared for the first quarter of 20A is illustrated.

MATERIALS PURCHASE BUDGET

FIRST QUARTER OF 20A

	January	*February*	*March*
Material X:			
Production requirements (pieces)	8,500	9,500	10,000
Add end-of –month inventory desired (pieces)	4,750	5,000	5,000
Total (pieces)	13,250	14,500	15,000
Deduct inventory at beginning of month (pieces)	4,250	4,750	5,000
Purchases required (pieces)	9,000	9,750	10,000
Price per piece	$1.50	$1.50	$1.50
Cost of purchases	$13,500	$14,635	$15,000
Material Y:			
Production requirements (pieces)	4,250	4,750	5,000
Add end-of-month inventory desired (pieces)	2,375	2,500	2,500
Total (pieces)	6,625	7,250	7,500
Deduct inventory at beginning of month (pieces)	2,125	2,375	2,500
Purchases required (pieces)	4,500	4,875	5,000
Price per piece	$1.02	$1.00	$1.00
Cost of purchases	$4,590	$4,875	$5,000
Total cost of			

materials purchased	$18,090	$19,500	$20,000

DIRECT LABOR BUDGET

The preliminary data show that one hour of direct labor is required to complete one unit of product and that the standard rate per hour is $2.00. Deviations from these standards should be budgeted if they can be anticipated. In this instance, no departures from standard are expected to take place, and a direct labor budget is made up as given below.

DIRECT LABOR BUDGET

FIRST QUARTER OF 20A

	January	*February*	*March*
Production (units)	4,250	4,750	5,000
Direct labor hours	4,250	4,750	5,000
Direct Labor cost	$8,500	$9,500	$10,000

FACTORY OVERHEAD COSTS BUDGET

Factory overhead costs budgets for January, February, and March are illustrated below. Basic information was supplied by preliminary data.

FACTORY OVERHEAD BUDGET

	Fixed	*Variable*	*Total*
January, 20A 4,250 hours			
Indirect labor (variable--$.60 per hour)	$1,000	$2,550	$3,550
Depreciation	5,000	-	5,000
Repairs & maintenance (variable-$.08 per hour)	200	340	540
Taxes and insurance	600	-	600
Supplies	800	-	800
Heat and Light	400	-	400
Power (variable-$.10 per hour)	-	425	425
Miscellaneous (variable-$.22 per hour)	-	935	935
	$8,000	$4,250	$12,250
February, 20A 4,750 hours			
Indirect labor (variable-$.60 per hour)	$1,000	$2,850	$3,850
Depreciation	5,000	-	5,000
Repairs & maintenance (variable-$.08 per hour)	200	380	580
Taxes and insurance	600	-	600
Supplies	800	-	800
Heat and Light	400	-	400
Power (variable-$.22 per hour)	-	475	475
Miscellaneous (variable-$.22 per hour)	-	1,045	1,045
	$8,000	$4,750	$12,750

March, 20A 5,000 hours	*Fixed*	*Variable*	*Total*
Indirect labor (variable-$.60 per hour)	$1,000	$3,000	$4,000
Depreciation	5,000	-	5,000
Repairs & maintenance (variable -$.08 per hour	200	400	600
Taxes and insurance	600	-	600
Supplies	800	-	800
Heat and light	400	-	400
Power (variable-$.10 per hour)	-	500	500
Miscellaneous (variable-$.22 per hour)	-	1,100	1,100
	$8,000	$5,000	$13,000

SELLING AND ADMINISTRATIVE EXPENSES BUDGET

Like factory overhead costs, selling and administrative expenses are made up of fixed and variable components. Salaries, depreciation, and miscellaneous expenses are a fixed amount each month; commissions, advertising, and bad debts are budgeted as a percentage of sales revenue and consequently vary directly with sales. Budgets for January, February, and March are given below.

SELLING AND ADMINISTRATIVE EXPENSES BUDGET

	Fixed	*Variable*	*Total*
January, 20A			
Sales Volume-$48,000			
Salaries	$3,000	-	$3,000
Commissions			
(3% of sales)	-	$1,440	1,440
Advertising			
(1% of sales)	-	480	480
Bad Debts			
(1% of sales)	-	480	480
Depreciation	500	-	500
Miscellaneous	3,500	-	3,500
	$7,000	$2,400	$9,400
February, 20A			
Sales Volume-$54,000			
Salaries	$3,000	-	$3,000
Commissions			
(3% of sales)	-	$1,620	1,620
Advertising			
(1% of sales)	-	540	540
Bad debts			
(1% of sales)	-	540	540
Depreciation	500	-	500
Miscellaneous	3,500	-	3,500
	$7,000	$2,700	$9,700
March, 20A			
Sales Volume-$60,000			
Salaries	3,000	-	$3,000
Commissions			
(3% of sales)	-	$1,800	1,800
Advertising			
(1% of sales)	-	600	600
Bad debts			
(1% of sales)	-	600	600
Depreciation	500	-	500

Miscellaneous	3,500	-	3,500
	$7,000	$3,000	$10,000

CASH RECEIPTS BUDGET

Normally, the bulk of a firm's cash receipts comes from customers. The possibility of cash from other sources, such as additional investments, sales of assets, extraneous revenue, and borrowings should be investigated, however, when cash receipts are being estimated.

We shall assume that the JS-JK Company expects no cash receipts other than the usual collections from customers during the first quarter of 20A. Past experience indicates that collections normally follow the pattern below:

- No collections are made in the month of sale.
- 80 per cent of the sales of any month are collected in the following month.
- 19 per cent of sales are collected in the second following month.
- 1 per cent of sales generally prove to be uncollectible.

According to the preliminary data, accounts receivable outstanding on January 1 will probably amount to $60,000. It is expected that $48,000 will be collected in January, $21,400 in February, and that the remaining $600 will not be collected. Cash receipts are budgeted as shown below.

CASH RECEIPTS BUDGET
FIRST QUARTER OF 20A

	January	*February*	*March*
Collections from customers:			
Accounts receivable of January 1	$48,000	$11,400	
Sales for Quarter:			
January sales:			
80% of$ 48,000		38,400	
19% of $48,000			$9,120
February sales:			
80% of $54,000			43,200
Other sources:			
None			
Total Receipts	$48,000	$49,800	$52,320

CASH DISBURSEMENTS BUDGET

Data collected in individual budgets previously illustrated supply the basic information for the cash disbursements budget, although adjustments and additions will have to be made. Materials are not normally paid for in the month of purchase; accrued payrolls usually exist at the end of each month; some costs, such as depreciation and bad debts, require no cash outlay; some expenses, such as insurance, are generally prepaid; other expenses, such as taxes, are left to accrue for several months. Also, there may be disbursements for extraneous items, such as the purchase of equipment, which do not show up in any of the individual budgets already prepared. The cash disbursements budget of the JS-JK Company is a case in point.

The JS-JK Company has collected the following data on cash disbursements for the first quarter of 20A:

1. Purchases of materials will be paid for in the month following the purchase; a 2 per cent discount will be taken on all invoices. Accounts payable on January 1 will be $20,000, still subject to the discount.
2. Payrolls are paid on the 17th and the 2nd of each month for the preceding half-month. The accrued payroll on January 1 will be $9,000.
3. Taxes and insurance are paid annually on March 1; a payment of $7,200 will be made on March 1, 20A.
4. Repairs and maintenance, supplies, heat and light, power, and miscellaneous factory overhead costs are paid for in the month incurred.
5. Advertising is prepaid at the beginning of each quarter; a payment of $1,620 will be made on January 1.
6. Miscellaneous selling and administrative expenses are paid for in the month incurred.
7. A dividend of $2,000 will be declared in February, payable on March 15.
8. Delivery equipment to cost $4,200 will be purchased and paid for in February.

Using the data collected in the various budgets and the information that has been given above, the schedules of disbursements shown below can be made up for accounts payable and the monthly payrolls.

DISBURSEMENTS ON ACCOUNTS PAYABLE
FIRST QUARTER OF 20A

	January	*February*	*March*
Accounts payable of January 1	$20,000		
Purchases of the period:			
January		$18,090	
February			$19,500
	$20,000	$18,090	$19,500
Less 2% cash discount	400	362	390
Cash disbursements	$19,600	$17,728	$19,110

PAYROLL DISEMBURSREMENTS
FIRST QUARTER OF 20A

	January	*February*	*March*
Payroll:			
Direct labor	$8,500	$9,500	$10,000
Indirect labor	3,500	3,850	4,000
Selling & admin. Salaries	3,000	3,000	3,000
Commissions on sales	1,440	1,620	1,800
	$16,490	$17,970	$18,800
Disbursements:			
Accrued payroll of January 1	$9,000		
January payroll	8,245	$8,245	
February payroll		8,985	$8,985
March payroll			9,400
	$17,245	$17,230	$18,385

All of the data are assembled below in a cash disbursements budget.

CASH DISBURSEMENTS BUDGET
FIRST QUARTER OF 20A

	January	*February*	*March*
Accounts payable--purchase of Materials	$19,600	$17,728	$19,110
Payrolls	17,245	17,230	18,385
Factory overhead costs:			
Repairs and maintenance	540	580	600
Taxes and insurance	-	-	7,200
Supplies	800	800	800
Heat and Light	400	400	400
Power	425	475	500
Miscellaneous	935	1,045	1,100
Selling & admin. Expenses:			
Advertising	1,620	-	-
Miscellaneous	3,500	3,500	3,500
Dividends	-	-	2,000
Purchase of delivery equipment	-	4,200	-
Total disbursements	$45,065	$45,958	$53,595

BUDGETED CASH BALANCES

After cash receipts and cash disbursements have been estimated, the JS-JK Company prepares a budget showing what cash balances are expected at the end of each month. This budget serves to show the cash position that may be expected. It also indicates the periods in which bank loans may have to be made and periods in which loans can be repaid. The advantages of anticipating cash needs well in advance are too obvious to require discussion; that a cash budget will be helpful in securing loans goes without saying.

Budgeted cash balances of the JS-JK Company are as follows:

BUDGETED CASH BALANCES
FIRST QUARTER OF 20A

	January	*February*	*March*
Cash balance, first of month	$10,000	$12,935	$16,777
Add budgeted receipts	48,000	49,800	52,320
	$58,000	$62,735	$69,097
Less budgeted disbursements	45,065	45,958	53,595
Budgeted cash balance, end of month	$12,935	$16,777	$15,502

BANK LOANS

The financial policy of some companies requires that a minimum cash balance be maintained at all times. If such is the case, alterations must be made in the cash budget to accommodate bank loans and their repayment. Assume, for example, that the JS-JK Company desires to maintain a minimum cash balance of $15,000. In any month when it appears that the balance will fall below the minimum, 30-day bank loans in even multiples of $1,000 with interest at 6 per cent deducted in advance are made at the beginning of the month. The cash budget might be revised as follows:

BUDGETED CASH BALANCES
FIRST QUARTER OF 20A

	January	*February*	*March*
Estimated receipts	$48,000	$49,000	$52,320
Estimated disbursements	45,065	45,958	53,595
Excess receipts (disbursements)	$2,935	$3,842	($ 1,275)
Opening cash balance	10,000	15,920	16,762
Cash balance before bank loans	$12,935	$19,762	$15,487
Add bank loans net interest	2,985*		
Deduct bank loans repaid		3,000	
Budgeted cash balance, end of month	$15,920	$16,762	$15,487

*Loan of $3,000 less interest of $15.

BUDGETED INCOME STATEMENTS

After the cash budget has been completed, the JS-JK Company sets up budgeted, or, as they are often called pro-forma, monthly income statements, showing the net income that is to be expected during the budget period. On these statements, both the cost of sales and the selling and administrative expenses are shown at standard. Anticipated variances are predetermined and added to or deducted from the net income computed at standard. Statements for the first quarter of 20A are shown below.

EXHIBIT 1
JS-JK COMPANY
BUDGETED INCOME STATEMENTS
FIRST QUARTER OF 20A

	January	*February*	*March*	*Total*
Budgeted sales-units	4,000	4,500	5,000	13,500
Budgeted production-units	4,250	4,750	5,000	14,000
Sales revenue @$12 per unit	$48,000	$54,000	$60,000	$162,000
Cost of sales (at standard):				
Material X @ $3.00 per unit	$12,000	$13,500	$15,000	$40,500
Material Y @ $1.00 per unit	4,000	4,500	5,000	13,500
Material cost	$16,000	$18,000	$20,000	$54,000
Direct Labor @ $2.00 per unit	$8,000	$9,000	$10,000	$27,000
Factory overhead costs:				
Fixed @ $1.60 per unit	$6,400	$7,200	$8,000	$21,600
Variable @ $1.00 per unit	4,000	4,500	5,000	13,500
Factory overhead costs	$10,400	$11,700	$13,000	$35,100
Total cost of sales	$34,400	$38,700	$43,000	$116,100
Gross margin (at standard)	$13,600	$15,300	$17,000	$45,900
Selling & administrative expenses (at standard):				
Fixed @ $1.40 per unit	$5,600	$6,300	$7,000	$18,900
Variable @ $.60 per unit	2,400	2,700	3,000	8,100
Total expenses	$8,000	$9,000	$10,000	$27,000
Net income (at standard)	$5,600	$6,300	$7,000	$18,900

CONCLUSION

Budgeting is an integral part of the planning and control functions. The budget provides a means by which plans to carry out the company's aims and objectives are expressed quantitatively, activities are coordinated, and performances are evaluated.

Predicting the future is one problem in budget preparation; dealing with human beings is another. The second problem is no less important than the first. Budgeting can be successful only if a satisfactory solution to each problem can be found.

Master (comprehensive) budgeting starts with a sales forecast or plan. With the sales budget as a foundation, budgets are then made up for production, purchases of materials, selling and administrative expenses, and cash receipts and disbursements. Comprehensive budgeting

ends with the preparation of budgeted, or *pro-forma,* financial statements. Budgets must be built from the bottom up, with all personnel who are charged with responsibility given a voice in their preparation.

Properly applied, the budget can be a useful management tool; ill conceived or improperly administered, it can be a deterrent to harmonious operations.

CHAPTER 8
USING VARIANCE ANALYSIS TO EVALUATE PERFORMANCE

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define the *standard* and the *standard costs*
- Identify the types of standards
- State the purposes for using standard costs
- Describe the steps involved in variance analysis
- Calculate sales variances
- Calculate the different types of variances for manufacturing costs--direct materials, direct labor, and manufacturing overhead.
- Explain the managerial significance of these variances.
- Computer variances in selling and administrative expenses
- Identify the types of performance reports
- Prepare a flexible budget and explain its advantage over the static budget format.

Variance analysis is a tool managers use to evaluate financial performance. You can carry out variance analysis for such areas of the company as sales, purchasing, and distribution. Variance analysis can also help you appraise the productivity of your employees, including sales personnel, factory workers, and delivery personnel, among others. By using variance analysis, you can spot and correct problems, as well as identify areas of success.

Locating deviations between expected and actual figures through variance analysis helps you not only to identify problems but also to determine how large the problem is, who is responsible, and whether it is controllable or not. For example, if the cost of manufacturing a product or rendering a service were higher than expected, you would want to know the reasons for the discrepancy and the severity of the situation. With the aid of variance analysis, you can then decide whether the problem lies with buying or planning or general productivity. Or perhaps you find that actual sales fall short of expectations. You would want to know whether the sales manager can control the problem (e.g., poor salesperson effort) or not (e.g., an economic depression).

Variance analysis also spotlights positive performances. If the actual cost of a product were less than expected, for instance, you would want to know what you and your employees are doing correctly so as to capitalize on the situation. In this event, you would want to reward superior performances by employees or to know that the company is using new technological processes that successfully keep costs down.

Typically, only significant variances warrant investigation. To help you interpret variance analysis reports, understand which variances are important for your position, and remedy any problems. This chapter will cover the following topics: (1) the standards of revenue

and cost, (2) the use of variance analysis to monitor performance, (3) the evaluation of sales and cost variances, (4) the use of flexible budgeting, and (5) analysis of warehouse problems and sales performance. You will learn to calculate and appraise variances so as to answer these questions:

1. Do your actual sales and expenses match your estimates? Why or Why not?
2. Is the variance favorable or unfavorable? If it is favorable, who should get credit for it? If it is unfavorable, is it controllable?
3. Is the variance uncontrollable because of external factors such as a strike?
4. Are your standards too tight?
5. What trends do the variances reveal?
6. If the variance is significant (or controllable), what are the reasons and who is responsible? What corrective actions should be taken?

DEFINING A STANDARD

At the beginning of the period, you set standards such as sales quotas, standard costs (e.g., material price, wage rate), and standard volume. Let us focus on standard cost, which is the predetermined cost of manufacturing, servicing, or marketing an item during a given future period. It is based on current and projected conditions. This norm is also dependent upon quantitative and qualitative measurements (e.g., working conditions). A manager commented in an interview that his facilities department uses standard costs for equipment installation and relocation to determine the cost to charge to the ordering unit. For determining the projected cost of a job, you should understand the concept of and calculations for standard costs.

Variance analysis compares standard to actual costs or performances. Contingent on the cost-benefit relationship, these analyses may be as detailed as necessary. Evaluation of variances may be done yearly, quarterly, monthly, daily, or hourly, depending on how quickly you need to identify a problem. But since you do not know actual figures (e.g., hours spent) until the end of the period, variances can only be arrived at then.

There are two types of variances: material and immaterial. For material variances, you must identify the responsible departments or persons and take corrective action. Insignificant, or immaterial, variances need not be looked into further unless they recur and/or reflect potential difficulty.

One way to measure if a variance is significant is to divide the variance by the standard cost. Generally, a variance of more than 5 percent may be deemed material. In some cases, materiality is measured by dollar amount or by volume level. For example, the company may set a policy looking into any variance that exceeds $10,000 or 20,000 units, whichever is less. Guidelines for materiality should be set to reflect the importance of an element to the corporation's performance and decision-making. For example, when a product or activity is critical to the proper functioning of the business (e.g., critical part, promotion, repairs), limits for materiality should be such that early reporting of variances is encouraged. Further, statistical techniques can be used to ascertain the significance of cost and revenue variances.

THE USEFULNESS OF VARIANCE ANALYSIS

Setting standards and analyzing variances are essential in financial analysis and decision-making. Both activities tell you how you are doing and what is going wrong or right. Some specific advantages of standards and variances are as follows:

- Assist in decision-making because areas of inefficiency are identified.
- Help formulate sales price because you can determine what the item should cost.
- Set and evaluate objectives by comparing budgeted to actual figures.
- Establish cost control since cost inefficiencies and overruns are pinpointed.
- Highlight problem areas through the "management by exception" principle.
- Pinpoint responsibility for undesirable performance so that con-corrective action may be taken. Variances in product activity (cost, quantity, quality) are typically the foreman's responsibility. Variances in sales are often responsibility of the marketing manager. Variances in profit usually relate to overall operations. Note that variances indicating strengths should be further taken advantage of.
- Facilitate communication within the organization, such as between management and supervisors, because everyone knows the standard to accomplish.
- Assist in planning by forecasting needs (e.g., cash requirements).
- Establish bid prices on contracts because desired profit goals can be determined.
- Simplify bookkeeping procedures by keeping the records at standard cost.

Although standard costing and variance analysis are exceptionally important tools, they can have their drawbacks. For example, biases in deriving standards can exist. Further, material variances can sometimes be due to out-of-date standards or poor budgetary processes rather than actual performances. Therefore, you should use these tools with caution.

SETTING STANDARDS

There are four types of standards:

- ***Basic.*** These are not changed from period to period. They form the basis with which later period performance is compared. No consideration, however, is given to a change in the environment, which is an unrealistic basis.
- ***Maximum efficiency.*** These are perfect standards, which assume ideal, optimal conditions. Realistically, certain inefficiencies will occur.
- ***Currently attainable.*** These are based on efficient activity. They are possible goals but difficult to achieve. Normal occurrences, such as anticipated machinery failure, are considered in the calculation at currently attainable standards.
- ***Expected.*** These are expected figures, which should come very close to actual figures.

You should base standards on the situation being appraised. Here are some examples of how to match standards with particular situations:

Situation	Standard
Cost reduction	Tight
Pricing policy	Realistic
High-quality good	Perfection

DETERMINING AND EVALUATING SALES VARIANCES

Actual and budgeted sales figures should be compared by territory, salesperson, and product to see if expectations are being realized.

To evaluate sales performance, you should focus on *profitable* sales volume. Don't be misled by *high* sales volume; high sales volume does not automatically mean high profits because the high costs associated with products need to be subtracted. Thus, reports by salespersons should show not only revenue derived but also gross profit earned. Although gross profit may not necessarily translate into net profit because of high selling and advertising expenses, it is a legitimate measure of performance. Overall, the report will reveal where to put sales effort.

When you appraise changes in gross profit, you have to recognize that these changes may be caused by changes in sales mix, selling price, volume, or returns. Also, a complete analysis of sales volume should include consideration of budgets, standards, sales plans, industry comparisons, and manufacturing costs.

Sales variances are computed to gauge the performance of the marketing function.

EXAMPLE 1

Western Corporation's budgeted sales for 20XI were:

Product A: 10,000 units at $6.00 per unit	$ 60,000
Product B: 30,000 units at $8.00 per unit	240,000
Expected sales revenue	$300,000
Actual sales for the year were	
Product A: 8,000 units at $6.20 per unit	$ 49,600
Product B: 33,000 units at $7.70 per unit	254,100
Actual sales revenue	$303,700

There is a favorable sales variance of $3,700, consisting of the sales price variance.

The sales price variance equals:

(Actual selling price - Budgeted selling price) x Actual units sold

Product A ($6.20 - $6.00) x 8,000	$1,699	Favorable
Product B ($7.70 - $8.00) x 33,000	9,900	Unfavorable
Sales price variance	$8,300	Unfavorable

The sales volume variance equals:

(Actual quantity - Budgeted quantity) x Budgeted selling price

Product A (8,000 - 10,000) x $6.00	$12,000	Unfavorable
Product B (33,000 - 30,000) x $8.00	24,000	Favorable
Sales volume variance	$12,000	Favorable

By looking at the trend in sales, you may identify unfavorable trends requiring a reduction of the sales effort or a change in product.

You have to evaluate the meaning of sales variances to your department. For example, an unfavorable sales volume variance may arise from poor marketing procedures. An unfavorable total sales variance may signal a problem with the marketing manager because he or she has control over sales, advertising, and often pricing. Unfavorable sales situations may also be caused by a lack in quality control, substitution of poorer quality components because of deficient purchasing, or deficient product design based on poor engineering.

You should also compare your divisional sales figures with the sales figures of competing companies' divisions and with industry averages. Sometimes an unfavorable sales volume variance is caused by the price cuts of competing companies. And, if unfavorable volume variance is coupled with favorable price variance, you may have lost sales by raising your prices.

COST VARIANCES

When a product is made or a service is performed, you have to determine these three cost measures:

- Actual cost equals actual price times actual quantity, where actual quantity equals actual quantity per unit of work times actual units of work produced
- Standard cost equals standard price times standard quantity, where standard quantity equals standard quantity per unit of work times actual units of work produced.
- Total cost variance equals actual cost less standard cost.

Total cost variance has the two elements: price variance and quantity variance. Price (rate, spending) variance is calculated as follows:

(Standard price - Actual price) x Actual quantity

Quantity (usage, efficiency) variance is formulated in the following manner:

(Standard quantity - Actual quantity) x Standard price

These figures are computed for both material and labor.

MATERIAL'S VARIANCES

The material's price variance allows you to evaluate the activity of the purchasing department and to see the impact of raw materials cost changes on profitability, while the materials quantity variance helps you to judge the performance of the production supervisor. Example 1 calculates the three types of materials variances you need to know.

EXAMPLE 2

The standard cost of one unit of output (product or service) was $15, or three pieces at $5 per piece. During the period, 8,000 units were made. The actual cost was $14 per unit, or two pieces at $7 per piece,

Total Materials Variance		
Standard quantity x Standard price (24,000 x *$5)*	$120,000	
Actual quantity x Actual price (16,000 x $7)	112,000	
	$ 8,000	F
Materials Price Variance		
(Standard price - Actual price) x Actual quantity		
($5 - $7) x 16,000	$ 32,000	U
Materials Quantity Variance		
(Standard quantity - Actual quantity) x Standard price		
(24,000 - 16,000) x $5	$ 40,000	F

Unfavorable materials price variances may be caused by one or more of the following factors: inaccurate standard prices, failure to take a discount on quantity purchases, failure to shop for bargains, inflationary cost increases, scarcity in raw material supplies resulting in higher prices, and purchasing department inefficiencies.

Unfavorable materials quantity variances result from poorly trained workers, improperly adjusted machines, use of an improper production method, outright waste on the production line, and/or use of a lower grade material, purchased to save money.

Once the reasons for unfavorable materials variances have been determined, you can then locate the responsible departments or key personnel:

Reason	***Responsible Party***
Overstated price paid	Purchasing
Failure to detect defective goods	Receiving
Inefficient labor or poor supervision	Foreman
Poor mix in material	Production manager
Rush delivery of materials	Traffic
Unfavorable quantity variance	Foreman
Unexpected change in production volume	Sales manager

To correct an unfavorable material price variance, you can increase selling price, substitute cheaper materials, change a production method or specification, or engage in a cost reduction program. To achieve some of these ends, you should examine the variability in raw material costs, look at price instability in trade publications, and emphasize vertical integration to reduce the price and supply risk of raw materials.

Lastly, remember that you cannot control materials price variances when higher prices are caused by inflation or shortage situations or when rush orders are required by the customer, who will bear the ultimate cost increase.

Exhibits 1 and 2 present a details of material price variance report and a material usage variance report.

EXHIBIT 1
DETAILS OF MATERIAL PRICE VARIANCE REPORT

Date_____ Prepared by_____ Approved by_____

Voucher No.	Item No.	Item Name	Vendor No.	Quantity Purchased	Standard Cost		Actual Cost		Variance		Percent from Standard	Explanation
					Per Unit	Total	Per Unit	Total	Per Unit	Total		

EXHIBIT 2
MATERIAL USAGE VARIANCE REPORT

Cost Center **Unit**
Material Type **Date**

		Daily		*Month*		*Year*	
Date	Variance	Variance Percent	Explanation	Variance	Variance Percent	Variance	Variance Percent

LABOR VARIANCES

The standard labor rate is based on the contracted hourly wage rate. Where salary rates are set by union contract, the labor rate variance will usually be minimal. Labor efficiency standards are typically estimated by engineers based on an analysis of the production operation.

Labor variances are determined in a manner similar to that of material variances, as illustrated in Example 3.

EXAMPLE 3
The standard cost of labor is four hours times $9 per hour, or $36 per unit. During the period, 7,000 units were produced. The actual cost is six hours times $8 per hour, or $48 per unit.

Total Labor Variance		
Standard quantity x Standard price (28,000 x $9)	$252,000	
Actual quantity x Actual price (42,000 x $8)	336,000	
	$ 84,000	U
Labor Rate Variance		
(Standard price - Actual price) x Actual quantity		
($9 - $8) x 42,000	$ 42,000	F
Labor Efficiency Variance		
(Standard quantity - Actual quantity) x Standard price		
(28,000 - 42,000) x $9	$126,000	U

Possible causes of *unfavorable* labor rate variances include the following: (1) an increase in wages, (2) poor scheduling or production resulting in overtime work, and (3) use of workers commanding higher hourly rates than expected.

Possible reasons for labor rate variances can be matched with responsible parties, as follows:

Reason	***Responsible Party***
Use of overpaid or an excessive number of workers	Production manager or union contract
Poor job descriptions	Personnel
Overtime	Production planning

In the case of a shortage of skilled workers, it may be impossible to avoid an unfavorable labor price variance.

Labor efficiency (quantity) variances can be attributed to one or more of the following:

- Poor supervision
- Use of unskilled workers, who are paid lower rates, or the wrong mixture of labor for a given job
- Use of poor quality machinery
- Improperly trained workers
- Poor quality of materials requiring more labor time in processing
- Machine breakdowns
- Employee unrest
- Production delays due to power failure

The reasons and responsible parties for unfavorable labor efficiency variances can then be matched in these ways:

Reason	***Responsible Party***
Inadequate supervision	Foreman
Improper functioning of equipment	Maintenance
Insufficient material supply or poor quality	Purchasing

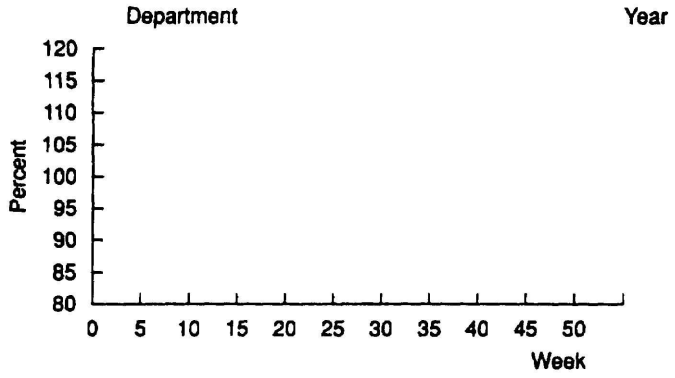
Exhibit 3 presents a labor performance report. Looking at this report aids in evaluating labor effectiveness and coming up with a revision in labor policies. A graph of weekly labor efficiency is presented in Exhibit 4.

EXHIBIT 3
LABOR PERFORMANCE REPORT

Department

	Day		*Date*	
Machine Operator	Achieved in Percent	Explanation	Month to Date in Percent	Year to Date in Percent

EXHIBIT 4
LABOR EFFICIENCY BY WEEK



OVERHEAD VARIANCES

The overhead variance is comprised of the controllable and volume variances.

Relevant computations follow:

Overhead control variance =	Actual overhead vs. Standard overhead (standard hours x standard overhead rate).
Controllable variance =	Actual overhead vs. Budget adjusted to standard hours.

Note: Budget adjusted to standard hours equals fixed overhead plus variable overhead (standard hours times standard variable overhead rate).

Volume variance = Standard overhead vs. Budget adjusted to standard hours.

Example 4 uses the equations to illustrate a hypothetical situation.

EXAMPLE 4
The following data are provided:

Budgeted overhead (includes fixed overhead of $7,500 and variable overhead of $10,000)	$ 17,500
Budgeted hours	10,000
Actual overhead	$8,000
Actual units produced	800
Standard hours per unit of production	5

Preliminary calculations are as follows:

Budgeted fixed overhead ($7,500/10,000 hr)		0.75	
Budgeted variable overhead ($10,000/10,000 hr)		1.00	
Total budgeted overhead ($17,500/10,000 hr)		$1.75	
Standard hours (800 units x 5 hr per unit)		$4,000	
Total Overhead Variance			
Actual overhead		$8,000	
Standard overhead			
Standard hours	4,000 hr		
Standard overhead rate	x $1.75	7,000	
		$ 1,000	U
Controllable Variance			
Actual overhead		$8,000	
Budget adjusted to standard hours:			
* Fixed overhead	$7,500		
* Variable overhead (Standard hours x Standard variable overhead rate - 4,000 x $1)	4,000	11,500	
		3,500	F
Volume Variance			
Standard overhead		7,000	
Budget adjusted to standard hours		11,500	
		4,500	U

Because unfavorable variances exist, you would want to locate the responsible parties. The controllable variance is the responsibility of the foreman, since he or she influences actual overhead incurred. The volume variance is the responsibility of management executives and production managers, since they are involved with plant utilization.

On the one hand, variable overhead variance information is helpful in arriving at output level and output mix decisions. It also assists in appraising decisions regarding variable inputs. On the other hand, fixed overhead variance data provide information regarding decision-making astuteness in relation to the purchase of some combination of fixed plant size and variable production inputs.

The possible reasons for recurring unfavorable overhead volume variances include the following:

- The purchase of the wrong size plant.
- Improper scheduling.
- Insufficient orders.
- Shortages in material.
- Machinery failure.
- Long operating time.
- Inadequately trained workers.

When idle capacity exists, this may indicate long-term operations planning problems.

THE USE OF FLEXIBLE BUDGETS IN PERFORMANCE REPORTS

The static (fixed) budget is geared to only one level of activity and thus, has problems in cost control because it does not distinguish between fixed costs and variable costs.

The flexible budget is geared toward a range of activities rather than a single level of activity. A flexible budget employs budgeted figures at different capacity levels. It allows you to choose the best expected (normal) capacity level (100%) and to assign pessimistic (80%), optimistic (110%), and full (150%) capacity levels. You can then see how your department is performing at varying capacity levels. Fixed costs remain constant as long as you operate below full capacity.

Flexible budgeting distinguishes between fixed and variable costs, thus allowing for a budget, which can be automatically adjusted (via changes in variable cost totals) to the particular level of activity actually, attained. Thus, variances between actual costs and budgeted costs are adjusted for volume ups and downs before differences due to price and quantity factors are computed. Note that flexible budgets are primarily used to accurately measure performance because they compare actual costs for a given output with the budgeted costs for the *same level of output.*

Exhibit 5 presents an example of a flexible budget

EXHIBIT 5
FLEXIBLE BUDGET

Cost	*Variable Cost*	*Fixed Cost*	*Budget (50,000 hrs.)*	*Actual (60,000 hrs.)*	*Budget (60,000 hrs.)*	*Spending Variance*
Indirect material	$.80	$6,000	$46,000	$56,000	$54,000	$2,000(U)
Indirect labor	4.20	24,000	234,000	270,000	276,000	6,000(F)
Supervision		70,000	70,000	74,000	70,000	4,000(U)
Depreciation		40,000	40,000	32,000	40,000	8,000(F)
Power and light	.30	2,000	17,000	21,000	20,000	1,000(U)
Maintenance	4.70	58,000	293,000	287,000	340,000	53,000(F)
Total	$10.00	$200,000	$700,000	$740,000	$820,000	$60,000(F)

STANDARDS AND VARIANCES IN MARKETING

Prior to setting a marketing standard in a given trade territory, you should examine prior, current, and forecasted conditions. You should also make adjustments for standards that vary with geographical location. In formulating standard costs for the transportation function, minimum cost traffic routes should be selected based on the distribution pattern.

Standards for advertising cost in particular territories will vary depending upon the types of advertising media needed, which are in turn based on the type of customers the advertising is intended to reach as well as the nature of the competition.

Some direct selling costs can be standardized, such as product presentations for which a standard time per sales call can be established. Direct selling expenses should be related to distance traveled, frequency of calls made, etc. If sales commissions are based on sales generated, standards can be based on a percentage of net sales.

Time and motion studies are usually a better way of establishing sales standards than prior performance, since past strategies may have been inefficient.

Of the numerous marketing standards and variances, we will focus on, for the purpose of illustration, those associated with sales.

Sales Standards

Sales standards may be set in terms of effort, accomplishments, or the relationship between effort and accomplishment. For example, a salesperson may be expected to make 100 calls per month. By making 100 calls, the salesperson meets a standard. He or she may be expected to obtain 60 orders or $300,000 in business based on the 100 calls. By doing so, a different standard is accomplished. You need to set sales standards to control sales activities, to reward merit, and to encourage sales effort.

Analyzing Salesperson Variances

You should appraise sales force effectiveness within a territory, including time spent and expenses incurred. Examples 5 and 6 provide you with the data and computations for analyzing variances in two hypothetical situations.

EXAMPLE 5

Sales data for your department follow.

Standard cost	$240,000	
Standard salesperson days	2,000	
Standard rate per salesperson day	$120	
Actual cost	$238,000	
Actual salesperson days	1,700	
Actual rate per salesperson day	$140	
Total Cost Variance		
Actual cost	$238,000	
Standard cost	240,000	
	$ 2,000	F

Note: Cost variances may be determined by territory, product, or personnel. The control variance is broken down into salesperson days and salesperson costs.

Variance in Salesperson Days
(Actual days - Standard days) x Standard rate per day
(1,700 - 2,000) x $120 $36,000 F

The variance is favorable because the territory was handled in fewer days than expected.

Variance in Salesperson Costs
(Actual rate - Standard rate) x Actual days
($140 - $120) x 1,700 $34,000 U

An unfavorable variance results because the actual rate per day is greater than the expected rate per day.

EXAMPLE 6
A salesperson called on 55 customers and sold each an average of $2,800 of merchandise. The standard of calls is 50 and the standard sale is $2,400. Variance analysis of calls and sales follows.

Total Variance

Actual calls x Actual sale (55 x $2,800)	$154,000	
Standard calls x Standard sale (50 x $2,400)	120,000	
	$ 34,000	F

The $34,000 favorable variance can be broken down as follows.

Variance in Calls
Actual calls - Standard calls) x Standard sale
(55 - 50) x $2,400 $12,000 F

Variance in Sales
(Actual sale - Standard sale) x Standard calls
($2,800 - $2,400) x 50 $20,000 F

Joint Variance
(Actual calls - Standard calls) x (Actual sale - Standard sale)
(55 - 50) x ($2,800 - $2,400) $ 2,000 F

You should encourage your sales staff to push products with the highest *profitability* rather than the highest selling price or least sales resistance. Additional performance measures of sales force effectiveness include meeting sales quotas, the number of orders from current and new customers, profitability per order, and the relationship between salesperson costs and revenue obtained.

Avoid paying your salespeople commissions on gross sales because you may encourage them to sell to anyone, resulting in huge sales returns and allowances. Instead, the commission should be tied to net sales.

APPRAISAL OF MARKETING DEPARTMENT

Revenue, cost, and profitability information should be provided by product line, customer, industry segment, geographic area, channel of distribution, type of marketing effort, and average order size. New product evaluations should also be undertaken balancing risk with profitability.

Analysis of competition in terms of strengths and weaknesses should be made. Sales force effectiveness measures should also be employed for income generated by salesmen, call frequency, sales incentives, sales personnel costs and dollar value of orders generated per hours spent. Promotional effectiveness measures should be employed for revenue, marketing costs, and profits prior to, during, and subsequent to promotional efforts, including a discussion of competitive reactions. Advertising effectiveness measures, such as sales generated based on dollar expenditure per media and media measures (i.e., audience share), are also useful. Reports discussing product warranty complaints and disposition should also be provided.

Marketing costs may be broken down into the following areas: selling, promotion, credit evaluation, accounting, and administration (i.e., product development, market research). Another element is physical distribution—inventory management, order processing, packaging, warehousing, shipping outbound transportation, field warehousing, and customer services.

Control of marketing costs is initiated when such costs are assigned to functional groups such as geographic area, product line, and industry segment. Budgeted costs and rates should be provided and comparisons made between standard costs and actual costs at the end of the reporting period.

ILLUSTRATIVE MARKETING PERFORMANCE REPORTS

Exhibit 6 presents an illustrative format for a marketing performance report designed for the vice-president of marketing.

Exhibit 7 presents an illustrative format for a marketing performance report designed for the regional sales manager.

The marketing manager should be responsible for standard variable cost of sales, distribution costs (i.e., packing, freight out, marketing administration), and sales. The reason standard variable cost of sales is used is not to have the marketing area absorb manufacturing efficiencies and inefficiencies.

EXHIBIT 6
A MARKETING PERFORMANCE REPORT DESIGNED FOR THE VICE PRESIDENT OF MARKETING

	Budget	*Percent*	*Actual*	*Percent*	*Variance*
Sales					
Less: Standard variable cost of sales					
Manufacturing margin					
Less: Variable distribution costs					
Contribution margin					
Less: Regional fixed charges					
Controllable regional contribution margin					
Less: Marketing fixed charges (i.e., central marketing administration costs, national advertising)					
Marketing contribution margin					

EXHIBIT 7
A MARKETING PERFORMANCE REPORT DESIGNED FOR THE REGIONAL SALES MANAGER

	Budget	*Percent*	*Actual*	*Percent*	*Variance*
Sales					
Less: Standard variable cost of sales					
Manufacturing margin					
Less: Variable distribution costs (i.e., sales personnel commissions, freight out)					
Contribution margin					
Less: Regional fixed charges (i.e., salesmen salaries, travel and entertainment, local advertising)					
Controllable regional contribution margin					

VARIANCES IN ADMINISTRATIVE EXPENSES

As business expands, there is a tendency for administrative expenses to increase proportionately and to get out of line. However, central general and administrative expenses typically are of a fixed cost nature and hence there is less need to monitor these types of costs. Here, comparison of budgeted to actual costs can be made quarterly or even yearly! These comparisons should be

done by department or unit of responsibility. Suggested standards for administrative expenses appear below.

Administrative Function	*Unit of Standard Measurement*
Handling orders	Number of orders handled
Billing	Number of invoices
Check writing	Number of checks written
Clerical	Number of items handled
Customer statements	Number of statements
Order writing	Number of orders
Personnel	Number of employees hired
Payroll	Number of employees

Selling and administrative variances for nonoperating items are the responsibility of top management and staff. Such items include taxes and insurance. Performance reports may be prepared for the administrative function, such as the salaries of top executives, and for general department service costs, such as data processing. Performance measures may also be of a non-monetary nature, such as the number of files processed, the number of phone calls taken, and the number of invoices written. Variances between the dollar and nondollar factors can be determined and analyzed.

VARIANCES IN WAREHOUSING COSTS

Variance in warehousing costs can be calculated by looking at the cost per unit to store the merchandise and the number of orders anticipated. Example 7 provides the data and calculations of the warehousing cost variance for a hypothetical situation.

EXAMPLE 7

The following information applies to a product:

Standard cost	$12,100
Standard orders	5,500
Standard unit cost	$ 2.20
Actual cost	$14,030
Actual orders	6,100
Actual unit cost	$ 2.30
Total Warehousing Cost Variance	
Actual cost	$14,030
Standard cost	12,100
	$ 1,930 U

The total variance is segregated into the variance in orders and variance in cost, as follows:

Variance in Orders		
(Actual orders vs. Standard orders) x Standard unit cost		
(6,100 vs. 5,500) x $2.20	$1,320	U
Variance in Cost		
(Actual cost per unit vs. Standard cost per unit) x		
Actual orders ($2.30 vs. $2.20) x 6,100	$ 610	U

NONMANUFACTURING (SERVICE) ACTIVITIES

When nonmanufacturing activities repeat and result in a homogeneous product, standards may be used. The manner of estimating and employing standards can be similar to that applicable with a manufactured product. For instance, standards may be used for office personnel involved in processing sales orders and a standard unit expense for processing a sales order may be derived. The variance between the actual cost of processing a sales order with the standard cost can be appraised by sales managers and corrective steps taken. The number of payroll checks prepared should be a reliable measure of the activity of the payroll department. The number of invoices or vouchers prepared apply to billing and accounts payable. In these two cases, a standard cost per unit could be based on the variable expenses involved.

Variance analysis is used in non-production-oriented companies such as service businesses. Since we are not dealing with a product, a measure of volume other than units is necessary, for example, time spent. The measure of revenue is fee income.

The cost variances are still the same as in a manufacturing concern, namely budgeted costs versus actual costs. We also can derive the gross margin or contribution margin variance as the difference between that budgeted and that actually obtained. The profitability measures are expressed as a percent of sales rather than as dollars per unit. The relationship between costs and sales is often highlighted.

Service firms typically have numerous variances expressed in physical, rather than dollar, measures. Examples of physical measures are number of customers serviced and turnover rate in customers.

AN ILLUSTRATIVE VARIANCE ANALYSIS REPORT FOR A SERVICE BUSINESS

For a service business, cost variances may be reported in special reports. For example, the variance in time and cost spent for processing payments to creditors may be analyzed. An illustrative format follows.

Function	Variance in Time	Variance in Cost
Processing purchase orders		
Processing receiving reports		
Processing vendors' invoices		
Preparing checks		
Filing paid vouchers and supporting documents		

Variances for these functions are useful only for large companies where the volume of activity allows for the arrangement and analysis of such repetitive tasks.

CAPITAL EXPENDITURES

Variance reports are useful in controlling capital expenditures by studying the actual versus budgeted costs, as well as actual versus budgeted times for proposals at each stage of activity. Such reports enable management to take corrective cost-saving action such as changing the construction schedule. The director of the project is held accountable for the construction cost and time budget. Component elements within the project should also be analyzed. You can also compare the expected payback period and actual payback period. This assists in measuring operational results and budgeting efficiency. Also, estimated cash flows of the project can be compared with actual cash flows.

VARIANCE ANALYSIS REPORTS

Performance reports may be prepared looking at the difference between budgeted and actual figures for (1) production in terms of cost, quantity, and quality; (2) sales; (3) profit; (4) return on investment; (5) turnover of assets; (6) income per sales dollar; (7) market share; and (8) growth rate. Variance reports raise questions rather than answer them. For example, is sales volume down because of deficiencies in sales effort or the manufacturer's inability to produce? Variance analysis reports may be expressed not only in dollars, but also in percentages, ratios, graphs, and narrative.

Performance reports are designed to motivate managers and employees to change their activities and plans when variances exist. They should be terse and should concentrate on potential difficulties and opportunities. A section for comments should be provided so that explanations may be given for variances.

The timeliness of performance reports and detail supplied depends upon the management level the report is addressed to and the nature of the costs whose performance is being measured. A production supervisor may need daily information on the manufacturing operations, the plant superintendent may need only weekly data from his supervisor, and the vice-president for manufacturing may be satisfied with monthly performance figures for each plant. As you become more distant from the actual operation, the time interval for performance evaluation lengthens. Also, as you climb the ladder in the organization, performance reports contain data in increasingly summarized form.

Since performance reports depend upon the organizational structure, they should be designed based on the company's organization chart. Performance reports designed for a senior vice-president might deal with the entire business operations of the firm and the earnings derived from it; the vice-president of manufacturing would look at the efficiency of the production activity; the vice-president of marketing would evaluate the selling and distribution function; a plant head would be concerned with the output and earnings generated from his plant; a department head within the plant would be concerned with cost control.

Performance reports should contain analytical information. To obtain it we should evaluate source data such as work orders, material requisitions, and labor cards. Reasons for inefficiency and excessive costs should be noted such as those due to equipment malfunction and low quality raw materials.

For labor, the productivity measurement ratio of volume output per direct labor hour should be computed. Further, the output of the individual or machine should be compared to the "normal" output established at the beginning of the reporting period. Operating efficiency can thus be measured. A labor efficiency ratio can also be computed which is the variation between actual hours incurred and standard hours.

With regard to the evaluation of the divisional manager, fixed costs are generally not controllable by him, but variable costs are. There are instances, however, where variable costs are controllable by those above the division manager's level. An example is fringe benefits. These items should be evaluated independently since the division manager has no responsibility for them. The opposite may also be true, that is, the department manager may have control over certain fixed expenses such as lease costs. In such cases he should similarly be assigned responsibility, although a successor not involved in the lease negotiation may not be assigned responsibility.

CONCLUSION

Variance analysis is essential in the organization for the appraisal of all aspects of the business, including manufacturing, marketing, and service. Variances should be investigated if the benefits outweigh the costs of analyzing and correcting the source of the variance. Variance analysis reports should be in dollars and percentages.

Significant unfavorable variances must be examined to ascertain whether they are controllable by management or uncontrollable because they relate solely to external factors. When controllable, immediate corrective action must be undertaken to handle the problem. The manager should provide his recommendations. If a variance is favorable, an examination should be made of the reasons for it so that corporate policy may include the positive aspects found. Further, the responsible entity for a favorable variance should be recognized and rewarded.

The variance is within tolerable and normal range and thus no remedial steps are necessary.

- The variance is intolerable and thus either performance must be improved or new standards formulated in light of the current environment.

- The decision model was inappropriate considering the goal to be achieved and thus a more relevant model should be developed.

Reports on operating performance should show where performance varies from standard, the trend of performance, and the reasons for the variances, including the manager's explanation.

Reporting systems differ among companies regarding the frequency and timeliness of reports, details presented, arrangement of data, employee distribution, and size of variances necessitating follow-up. Variances can be evaluated by divisions, subdivisions, departments, and cost centers. Variance analysis should be made to the point that additional savings from cost control justify the additional cost of appraisal and reporting.

If responsibility for a variance is joint, corrective action should also be joint. If correction of an unfavorable variance involves a conflict with a corporate policy, the policy should be reevaluated and perhaps changed. If the policy is not changed, the variance should be considered uncontrollable.

Even if a variance is below a cut-off percent or dollar figure, management may still want to investigate it if the variance is consistently unfavorable because it may reveal a problem (e.g., poor supervision, wasteful practice). The cumulative impact of a repeated small unfavorable variance may be just as damaging as an occasional one.

Common reasons why budget and actual figures differ are the failure to take into account organizational changes, expense classification, consolidation, new accounting policies, and different revenue or expense recognition methods being used for budget versus accounting purposes.

CHAPTER 9
BUDGETING SALES AND SALES FORECASTS

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Understand how important the sales budget is
- Explain how important sales forecasts are to budgeting.
- Explain why sales forecasts are needed for managerial planning
- List three ways of making estimates
- Describe how regression analysis can be used to develop a sales forecasting model
- Prepare the sales budget

The sales budget is the starting point in preparing the master budget, since estimated sales volume influences nearly all other items appearing in the master budget. The sales budget, which ordinarily indicates the quantity of each product expected to be sold, allows all departments to plan their needs. Further, sales forecast figures determine staffing needs to reach targeted goals.

After sales volume has been estimated, the sales budget is constructed by multiplying the expected sales in units by the expected unit sales price.

SALES FORECASTS

Sales forecasts are needed for marketing, production, purchasing, manpower, and financial planning. Further, top management needs forecasts for planning and implementing long-term strategic objectives and planning for capital expenditures. Based on the firm's projected sales, the production function determines the machine, personnel, and material resources needed to produce its products or services. Sales forecasts are especially crucial aspects of many financial management activities, including budgets, profit planning, capital expenditure analysis, and acquisition and merger analysis. It is the key to other forecasts and plans.

Marketing managers use sales forecasts to determine 1) optimal sales force allocations, 2) set sales goals, and 3) plan promotions and advertising. Other things such as market share, prices, and trends in new product development are required. As soon as the company makes sure that it has enough capacity, the production plan is developed. If the company does not have enough capacity, it will require planning and budgeting decisions for capital spending for capacity expansion.

Production planners need forecasts in order to schedule production activities, order materials, establish inventory levels, and plan shipments. Some other areas which need forecasts

include material requirements (purchasing and procurement), labor scheduling, equipment purchases, maintenance requirements, and plant capacity planning.

The personnel department requires a number of forecasts in planning for human resources in the business. Workers must be hired and trained, and for these personnel there must be benefits provided that are competitive with those available in the firm's labor market. Also, trends that affect such variables as labor turnover, retirement age, absenteeism, and tardiness need to be forecast as input for planning and decision making in this function.

On this basis, the financial manager must estimate the future cash inflow and outflow. He must plan cash and borrowing needs for the company's future operations. Forecasts of cash flows and the rates of expenses and revenues are needed to maintain corporate liquidity and operating efficiency. In planning for capital investments, predictions about future economic activity are required so that returns or cash inflows accruing from the investment may be estimated. There are many forecasting methods in use, one of which is regression analysis. It is illustrated below, using *Excel*.

Accurate sales forecasting is important since an exaggerated sales forecast may result in your company hiring too many staff members or acquiring excessive facilities, which translates into unneeded costs. On the other hand, a very pessimistic forecast may cause a shortage in staff and facilities so that consumer demand cannot be met; this translates into lost business. Managers must also carefully appraise the sales estimates of other departments. For instance, the marketing department may give optimistic sales estimates because it may try to stimulate the sales effort. As a result, it may not realistically appraise consumer demand.

There is a wide range of forecasting techniques that the company may choose from. Basically, there are three ways of making sales forecasts for the sales budget:

1. Make a *statistical* forecast on the basis of an analysis of general business conditions, market conditions, and product growth curves.
2. Make an *internal* estimate by collecting the opinions of executives and salespersons.
3. Analyze the several factors that affect sales revenue and then predict the future behavior of each of these factors.

One powerful technique, called *multiple regression analysis*, is illustrated below. The following example shows how to develop a forecasting model with the aid of Excel.

EXAMPLE 1
A firm wishes to develop a sales forecasting model, by relating sales to price and advertising.

Month	*Sales (Y) (000)*	*Advertising (X1)(000)*	*Price (X2)*
1	25	4	75
2	26	5	82
3	32	6	94
4	30	6	95
5	32	7	98
6	37	7	110
7	38	8	110
8	41	8	99
9	46	9	95
10	48	10	97

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.97366474
R Square	0.94802302
Adjusted R Square	0.93317246
Standard Error	2.0400664
Observations	10

ANOVA

	df	*SS*	*MS*
Regression	2	531.3669036	265.6835
Residual	7	29.13309639	4.161871
Total	9	560.5	

	Coefficients	*Standard Error*	*t Stat*
Intercept	10.1734656	6.251683507	1.627316
Advertising	4.41923505	0.480669674	9.193913
Price	-0.0587237	0.081383757	-0.72157

The sales forecasting model then is:

Sales = 10.17 + 4.42 (Advertising) – 0.06 (Price)

SALES BUDGET

The sales budget is the starting point in preparing the master budget, since estimated sales volume influences nearly all other items appearing throughout the master budget. The sales budget should show total sales in quantity and value. The expected total sales can be break-even or target income sales or projected sales. It may be analyzed further by product, by territory, by customer and, of course, by seasonal pattern of expected sales.

EXAMPLE 2

Using the forecasting model from Example 1: Sales = 10.17 + 4.42 (Advertising) – 0.06 (Price), we obtain the following sales forecasts:

Month	*Advertising (X1)*	*Price (X2)*	*10.17 + 4.42 X1 –0.06 X2*	*Forecasts*
October	10	95	10.17 + 4.42 (10) –0.06 (95)	**48.67**
November	11	97	10.17 + 4.42 (11) –0.06 (97)	**52.97**
December	12	95	10.17 + 4.42 (12) –0.06 (95)	**57.51**

Based on the sales forecasts, Exhibit 1 presents the corresponding sales budget.

EXHIBIT 1
SALES BUDGET
(IN THOUSANDS)

	October	*November*	*December*
Expected sales in units	48.67	52.97	57.51
Unit sales price	x $95	x $97	x $95
Total sales	$4623.65	$5138.09	$5463.45

Note: A production budget is based on sales forecasts, in units, with adjustments for beginning and ending inventories. It is used to plan when items will be produced. After the production budget has been completed, it is used to prepare materials purchases, direct labor, and factory overhead budgets.

CHAPTER 10
BUDGETING MANUFACTURING COSTS

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Explain how the production budget leads to manufacturing costs budgets
- Prepare a direct material usage and purchase budget
- Discuss the procedures for developing material budgets.
- Prepare a direct labor budget
- Discuss the procedures for developing direct labor budgets.
- Prepare a factory overhead budget
- Describe how the flexible budget formula help develop the factory overhead budget

In a manufacturing firm, costs are divided into two major categories, by the functional activities they are associated with: (1) manufacturing costs and (2) nonmanufacturing costs, also called operating expenses.

Manufacturing costs are those costs associated with the manufacturing activities of the company. Manufacturing costs are subdivided into three categories: direct materials, direct labor, and factory overhead. Direct materials are all materials that become an integral part of the finished product. Examples are the steel used to make an automobile and the wood to make furniture. Glues, nails, and other minor items are called indirect materials (or supplies) and are classified as part of factory overhead, which is explained below.

Direct labor is the labor directly involved in making the product. Examples of direct labor costs are the wages of assembly workers on an assembly line and the wages of machine tool operators in a machine shop. Indirect labor, such as wages of supervisory personnel and janitors, is classified as part of factory overhead.

Factory overhead can be defined as including all costs of manufacturing except direct materials and direct labor. Some of the many examples include depreciation, rent, taxes, insurance, fringe benefits, payroll taxes, and cost of idle time. Factory overhead is also called manufacturing overhead, indirect manufacturing expenses, and factory burden.

In order to budget for manufacturing costs, a production budget needs to be established, which in turn requires a sales budget. Exhibit 1 illustrates this relationship.

EXHIBIT 1
SALES-PRODUCTION-MANUFACTURING COST BUDGETS

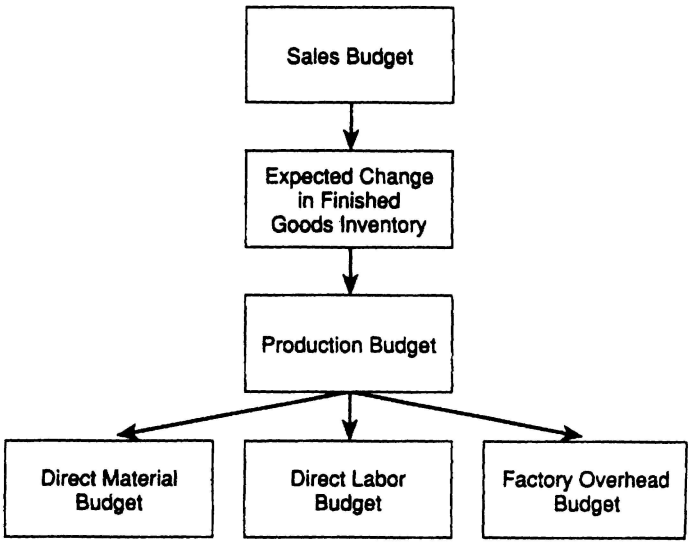


ILLUSTRATION
To illustrate how all manufacturing cost budgets are put together, consider a manufacturing company called the Worth Company, which produces and markets a single product.

THE SALES BUDGET
The sales budget is the starting point in preparing the master budget, since estimated sales volume influences nearly all other items appearing in the master budget. The sales budget, which ordinarily indicates the quantity of each product expected to be sold, allows all departments to plan their needs. After sales volume has been estimated, the sales budget is constructed by multiplying the expected sales in units by the expected unit sales price.

EXAMPLE 1
The Worth Company's sales budget for the year ending December 31, 20x1 is as follows:

	Quarter				
	1	**2**	**3**	**4**	**Total**
Expected sales in units	800	700	900	800	3,200
Units sales price	x $80	x $80	x $80	x $80	x $80
Total sales	$64,000	$56,000	$72,000	$64,000	$256,000

THE PRODUCTION BUDGET
After sales are budgeted, the production budget can be determined. The number of units expected to be manufactured to meet budgeted sales and inventory requirements determined by subtracting the estimated inventory at the beginning of the period from the sum is set forth in the

production budget. The expected volume of production is of the units expected to be and the desired inventory at the end of the period.

Good managers constantly evaluate whether production is on schedule with proposed budgets and make adjustments accordingly. For example a computer or an assembly line is down for an extended period of time, manager knows that production and output will probably be low for that time period.

EXAMPLE 2
The Worth Company's production budget for the year ending December 31, 20x1 is as follows:

	Quarter				
	1	**2**	**3**	**4**	**Total**
Planned sales (see Example 1)	800	700	900	800	3,200
Desired ending inventory[a]	70	90	80	100[b]	100[c]
Total needs	870	790	980	900	3,300
Less : Beginning inventory[d]	80	70	90	80	80
Units to be produced	790	720	890	820	3,220

[a] This figure is calculated as 10% of the next quarter's sales
[b] Estimated.
[c] The ending inventory for the year is the same as the one for the fourth quarter.
[d] The same as the previous quarter's ending inventory.

THE DIRECT MATERIAL BUDGET
When the level of production has been computed, a direct material budge should be constructed to show how much material will be required for production and how much material must be purchased to meet this production requirement. The purchase will depend on both expected usage of material and inventory levels. The formula for computation of the purchase is a follows:

Purchase in units = Usage + Desired ending material inventory units
- Beginning inventory units

EXAMPLE 3
The Worth Company's direct material budget for the year ending December 31, 20x1 is as follows:

	Quarter				
	1	**2**	**3**	**4**	**Total**
Units to be produced (see Example 2)	790	720	890	820	3,220
Material needs per unit (in lbs.)	x3	x3	x3	x3	x3
Material needs for production (in lbs.)	2,370	2,160	2,670	2,460	9,660
Desired ending inventory of materials (in lbs.)[a]	216	267	246	250[b]	250
Total material needs (in lbs.)	2,586	2,427	2,916	2,710	9,910
Less : Beginning inventory of materials (in lbs.)[c]	237	216	627	246	237
Materials to be purchased	2,349	2,211	2,649	2,464	9,673
Unit price	x $2	x $2	x $2	x $2	x $2
Purchase cost	$4,698	$4,422	$5,298	$4,928	$19,346

[a] 10 percent of the next quarter's units needed for production multiplied by 3 (material needs per unit).
[b] Estimated.
[c] The same as the prior quarter's ending inventory.

THE DIRECT LABOR BUDGET
The production requirements provide the starting point for the direct labor budget. To compute direct labor requirements, expected production volume for each period is multiplied by the number of direct labor hours to produce a single unit. The direct labor hours required to meet production needs are then multiplied by the direct labor cost per hour to obtain budgeted total direct labor costs.

EXAMPLE 4
The Worth Company's direct labor budget for the year ending December 31, 20x1 is as follows:

	Quarter				
	1	**2**	**3**	**4**	**Total**
Units to be produced (see Example 2)	790	720	890	820	3,200
Direct labor hours per unit	x5	x5	x5	x5	x5
Total hours	3,950	3,600	4,450	4,100	16,100
Direct labor cost per hour	x $5	x $5	x $5	x $5	x $5
Total direct labor cost	$19,750	$18,000	$22,250	$20,500	$80,500

THE FACTORY OVERHEAD BUDGET
The factory overhead budget provides a schedule of manufacturing costs other than direct materials and direct labor. These costs include factory rent, factory insurance, factory property taxes, and factory utilities. Using the contribution approach to budgeting requires the development of a predetermined overhead rate for the variable portion of the factory overhead.

In developing the cash budget, remember that depreciation is not a cash outlay; therefore, it must be deducted from the total factory overhead in computing cash disbursement for factory overhead.

EXAMPLE 5
To illustrate the factory overhead budget, we will assume that the cost-volume (flexible budget) formula is: Total factory overhead budgeted = $6,000 fixed (per quarter) plus $2 per hour of direct labor.

The Worth Company's factory overhead budget for the year ending December 31, 20x1 is as follows:

	Quarter				
	1	**2**	**3**	**4**	**Total**
Budgeted direct labor hours (see Example 4)	3,950	3,600	4,450	4,100	16,100
Variable overhead rate	x $2	x $2	x $2	x $2	x $2
Variable overhead budgeted	7,900	7,200	8,900	8,200	32,200
Fixed overhead budgeted	6,000	6,000	6,000	6,000	24,000
Total budgeted overhead	13,900	13,200	14,900	14,200	56,200

PLANNING AND CONTROL OF MATERIAL PURCHASES AND USAGE
After determining the number of units to be produced, the company prepares the materials requirement budget and the materials purchase budget. Purchase of materials depends on production requirements and inventories. The direct materials budget involves a balancing of raw material needed for production, the raw material inventory balances, and the purchase of raw materials. The direct materials budget may provide for allowances for waste and spoilage.

This section discusses the procedures for developing material budgets in more detail.

MATERIALS BUDGETS
The materials and inventory budgets in a typical manufacturing firm involves a determination of:

1. The quantities and cost of raw materials to be used.
2. The quantities and value of materials to be carried in the inventory. The inventory balance depends on how long it takes to receive raw materials from suppliers after the order is placed.
3. The quantities and cost of materials to be purchased. The amount to purchase considers expected production and raw material levels. The units of raw material needed equals the raw material usage multiplied by the units of production. In budgeting purchases, consideration should be given to expected price changes, interest cost to finance inventory, volume and cash discounts, desired delivery date, warehousing availability and cost, and obsolescence risk.
4. The quantity and value of finished goods to be carried in the inventory.

There are basically two methods of developing the inventory budget of raw materials:

1. Budget each important item separately based upon the production budget.
2. Budget materials as a whole or classes of materials based upon selected production factors. Practically all companies must use both methods to some extent.

Budgeting Individual Items of Material

The following steps should be taken in budgeting the major individual items of materials:

1. Determine the physical units of material required for each item of goods which is to be produced during the budget period.
2. Accumulate these into total physical units of each material item required for the production plan.
3. Determine for each item of material the quantity which should be on hand periodically to provide for the production budget with a reasonable degree of safety.
4. Deduct material inventories, which it is expected will be hand at the beginning of the budget period, to ascertain the total quantities to be purchased. The formula for computation of the purchase is:

Purchase in units = Usage + Desired ending material inventory units - Beginning inventory units

5. Develop a purchase policy which will insure that quantities will be on hand at the time they are needed. The purchase policy must consider such factors as economic order quantities (EOQ), economy of transportation, quantity discounts, and possible stockouts.
6. Translate the inventory and purchase requirements into dollars by applying the expected prices of materials to budgeted quantities. *Note:* The dollar amount of purchases is one of the major cash disbursement items in the cash budget.

Budget Based on Production Factors

For those items of materials which cannot be budgeted individually, the budget must be based on production factors such as total budgeted labor hours, productive hours, standard allowed hours, cost of materials consumed, or cost of goods manufactured.

EXAMPLE 6

Assume that cost of materials consumed (other than basic materials which are budgeted individually) is budgeted at $2,000,000 and that past experience demonstrates that these materials and supplies should be held to a rate of 4 times per year; then an average inventory of $500,000 should be budgeted. This would mean that individual items of material could be held in stock about 90 days (360 days/4).

MATERIALS PURCHASE BUDGET ILLUSTRATED

The following example illustrates a typical method of budgeting the quantities and cost of raw materials to be purchased. Assume that are three classes of materials: X, Y, and Z.

(1) Class X - Materials for which a definite quantity and monthly distribution is established in advance. Exhibit 2 presents a class X monthly budget.

Exhibit 2

	Item A			Item B			
	Units	*Standard Unit Cost*	*Amount*	*Units*	*Standard Unit Cost*	*Amount*	*Total*
July	300	$1.10	$330	650	$2.00	$1,300	$1,630
August	200	1.00	200	700	2.00	1400	1600
September	500	1.00	500	400	2.10	840	1340
October	250	1.00	250	250	2.25	563	813
November	300	1.00	300	350	2.25	788	1088
December	400	1.00	400	250	2.25	563	963
Total	1950		$1,980	2600		$5,453	$7,433

(2) Class Y - Material items for which definite quantities are established for the entire budget period but for which no definite monthly distribution program is established. Exhibit 3 presents a class Y monthly budget.

Exhibit 3

	Total Units Required to Be Purchased	*Estimated Price per Unit*	*Total cost*
Item H	2,500	0.25	625
I	3,400	0.34	1156
J	4,500	0.23	1035
K	2,700	0.45	1215
Total	13,100		$4,031

Here the distribution to months of the total cost of $4,031 must be made on the basis of past experience of budgeted production factors such as machine hours. The following figures may be assumed, based on past experience. Exhibit 4 presents a class Y monthly budget.

Exhibit 4

	Percentage Distribution Based on Past Experience	*Material Items*				
		H	*I*	*J*	*K*	*Total*
July	30%	$188	$347	$311	$365	$1,209
August	20%	$125	$231	$207	$243	$806
September	10%	$63	$116	$104	$122	$403
October	20%	$125	$231	$207	$243	$806
November	10%	$63	$116	$104	$122	$403
December	10%	$63	$116	$104	$122	$403
Total	100.00%	$625	$1,156	$1,035	$1,215	$4,031

(3) Class Z - Miscellaneous material items which are grouped together and budgeted only in terms of total dollar purchases for the total budget period. The distribution to months is again made on the basis of past experience or production factors. Exhibit 5 presents a class Z monthly budget.
The following figures may be assumed, based on budgeted machine hours (cost of Class Z materials is assumed to be $5 per hour):

Exhibit 5

	Budgeted Productive Hours	*Distributior to Months*
July	150	$750
August	240	$1,200
September	175	$875
October	80	$400
November	95	$475
December	100	$500
Total	840	$4,200

Note that total purchases required for Class Z materials amount to $4,200.

The total purchase budget may then be summarized as in Exhibit 6 which presents information by material class:

Exhibit 6

	Class X Materials	*Class Y Materials*	*Class Z Materials*	*Total*
July	$1,630	$1,209	$750	$3,589
August	1,600	806	1200	3606
September	1,340	403	875	2618
October	813	806	400	2019
November	1,088	403	475	1966
December	963	403	500	1866
Total	$7,433	$4,031	$4,200	$15,664

The estimated days material is to be held may be computed. Assume direct material used is budgeted at $500,000 with an expected turnover rate of 4 times. Thus, the average inventory is budgeted at $125,000. Material will be stored about 90 days (360/4). Material price and usage variances are discussed in Chapter 8. An illustrative budget is presented in Example 7.

EXAMPLE 7

XYZ COMPANY
PURCHASES BUDGET
FOR THE YEAR ENDED DECEMBER 31, 20X2

Type of Raw Material	Production +	Ending Inventory -	Beginning Inventory	Budgeted Price	Budgeted Purchases
A	200,000	40,000	20,000	$1.50	$330,000
	etc.				

PLANNING AND CONTROL OF DIRECT LABOR

For many businesses, labor costs are the highest cost. Therefore, labor cost must be estimated, controlled, and analyzed. The direct labor budget is for the entire plant and for each department. The direct labor budget will have an effect upon employees and the company's relationship with them.

The direct labor budget reveals the labor hours expected, the total cost, manpower requirements, and type of workers needed. The direct labor budget should consider the wages paid and hours expended in production activities. A work study of the operations involved would be helpful in setting standards. It applies to factory workers. Direct labor should be budgeted by time, cost, product, and service. Indirect labor is not directly associated with producing the product such as supervisory salaries, custodian wages, and repairman compensation. Overtime should be listed separately.

Labor planning includes manpower requirements, salary structure, contract agreements, job appraisal, training, and hiring. Direct labor planning aids in recruitment, training, and worker utilization.

This chapter will consider the preparation of the direct labor budget and labor reports, fringe benefits, and the control and analysis of labor.

DIRECT LABOR BUDGET

The labor budget is designed to provide a labor force that will meet production needs. The labor budget estimates labor hours and worker skills required. It determines total labor cost for production. The timing of cash payments for worker salaries is projected. Desired labor performance is specified.

The direct labor budget shows the wages paid to employees for producing a product during the manufacturing stages (e.g., assembling, finishing). The total direct labor cost considers each product and all departments in the manufacturing process.

Direct labor budgets vary by industry and company. Supervisors should provide their labor needs by type, quantity, and quality. Labor requirements are based on sales and production plans. The labor budget helps in planning and controlling labor. The budget should identify each major labor cost including fringe benefits and payroll taxes.

The objectives of the labor budget are to:

- Determine how many and type of employees are needed.
- Estimate labor hours needed to perform the necessary tasks.
- Ascertain the labor hour schedule.
- Measure employee performance.
- Control labor costs.

The labor budget procedures consider the production process, performance standards, organizational structure, dispersion of physical facilities (e.g., location, distances), and environment.

Direct labor is directly charged to a product or process. Direct labor for a service is the direct labor cost to provide that service. The direct labor budget indicates the expected cost of direct labor to produce products in the quantities needed as per the production budget. Therefore, the direct labor budget is prepared after the production budget. The direct labor budget establishes the direct labor hourly needs, employees required, per unit labor cost, cash flow requirements, and cost control. The estimation of direct labor cost depends on the standard cost per hour and the estimated production hours.

Budgeting for labor hours and cost depends to a large measure on the standardization of labor operations and on the sufficiency of labor records applying to historical labor performance and costs. The direct labor budget must be flexible and adjusted as orders are received. There is a continual updating of the direct labor budget. The labor budget may be revised because of a modification to a contract, change in facilities, lack of product demand, and changing economic conditions.

Many companies have three or four employees in nonproductive jobs (indirect labor) for

each direct worker manufacturing a product. For a project, direct labor is the labor identifiable to that project. Normal nonproductive time may be considered part of total labor time. A portion should be allocated to direct labor time, e.g., coffee breaks and personal time.

The company should strive for regularity of employment in budgeting for sales, production, and labor. An illustrative direct labor budget appears in Exhibit 1.

EXHIBIT 1
ABC MANUFACTURING COMPANY
DIRECT LABOR BUDGET
FOR THE YEAR ENDING DECMEBER 31, 20X2

Date and Department	*Units to Manufacture*	*Units Standard Hours*	*Total Standard Hours*	*Hourly Rate*	*Total Cost*
January:					
Dept. A	30,000	.2	6,000	$1.50	$9,000
Dept. B					
Dept. C					
etc.					

EXAMPLE 1
A production budget provides for 2,000 completed units of a product. The product requires four operations involving direct labor time. The standard times for these operations are:

1	2	3	4
1.50	.50	1.25	2

The planned direct labor hours are computed below

	Operation	*Direct Labor Hours*
1	2,000 x 1.50	3,000
2	2,000 x .50	1,000
3	2,000 x 1.25	2,500
4	2,000 x 2.00	4,000
		10,500

A schedule showing the computation of the average wage rate follows:

Operation No.1	*Planned Wage Rate*	*# of Direct Labor Employees*	*Weighted Amount*	*Average Wage Range Rate*
Group X	$ 8	5	$ 40	

Group Y	10	6	60	
		11	$ 100	9.10

LABOR REPORTS

Labor reports should be prepared showing labor problems, reasons, responsibility, and proposed corrections. It should examine labor turnover and discuss the causes. Labor reports should be prepared for the entire company for each department, and for each responsibility center within each manufacturing department. There should be exception reporting. An illustrative labor report is presented in Exhibit 2. An illustrative direct labor report showing variance analysis appears in Exhibit 3.

EXHIBIT 2
ILLUSTRATIVE LABOR REPORT

Operator Number	*Operator Name*	*Labor Hours*			*Labor \cost*			
		Actual	*Standard*	*Variance*	*Actual*	*Standard*	*Variance*	*Reason*

EXHIBIT 3
DIRECT LABOR REPORT SHOWING VARIANCE ANALYSIS

Date _____
Department _____
Supervisor _____

		Direct Labor Cost			
Employee Number	*Employee Operator Name*	*Actual*	*Standard*	*Variance*	*Reasons for Variance*
13	Blake	$ 15	$ 12	$ 3U	Insufficient training
15	Hartman	19	18	1U	Machine breakdown
20	Simon	25	20	5U	Lack of Materials
23	Frier	40	36	4U	Operator inefficiency
27	Whitman	50	40	10U	Fatigue
Total		$149	$126	$23U	
Variance as a percent of standard=$23/$126 = 18.3%					

FRINGE BENEFITS

Human Resources must prepare the fringe benefits package, which includes the overall payroll increase and the improvements in fringe benefits. It considers what the company can afford. For example, an unprofitable company must control costs. The package is also based on data obtained from nationwide personnel studies, local business surveys, surveys of the industry organizations, union information, and so on. Each department is allocated a portion of this increase that is assigned to individual employees based on performance and their position in their pay range.

LABOR COST CONTROL AND ANALYSIS

Labor analysis involves comparing actual labor performance to standard labor performance, computing output per labor hour, comparing indirect hours to direct hours, determining revenue per worker, and studying the turnover rate. A listing of employees should be approved. There should be adequate staff to perform activities. However, overstaffing may require layoffs. The number of employees should be consistent with the company's goals. Excessive pay should be avoided by controlling raises, putting the right worker on the right job (e.g., a low-priced worker for a low-priced job not a high-priced one, restricting overtime, and using part-time workers so as to cut salaries and fringe benefits.

Labor requirements should be studied, reviewed, and approved. Labor costs should be held to a minimum but employee attitudes must be considered. Labor may be minimized through product redesign and selecting efficient methods. Overtime must be authorized.

Excessive labor time must be avoided by improving worker training and efficiency, better scheduling, improving supervision, improving the quality of machinery and tools, and improving working conditions. Examine previous trends in labor hours to units produced by department and product. If there is a problem, workers may be shifted between departments. The relationship between indirect labor and direct labor should be considered. If indirect labor is excessive, it should be reduced. An evaluation should be made whether worker time is spent effectively.

Employee productivity may be measured by examining the trend in the ratios of sales to wages, sales to labor hours, and sales to units produced.

PLANNING AND CONTROL OF FACTORY OVERHEAD

The production executive should prepare the factory overhead budget. Overhead is based on the work load or volume the department is expected to handle. Factory overhead is not identifiable directly to a specific product, process, or job. Factory overhead includes factory rent, insurance, salaries, fringe benefits, power and supplies. Factory overhead may be allocated to products based on direct labor cost, direct labor hours, machine hours, or any other surrogate for production. The factory overhead budget should consider inventory position, production mix, and length of production run. Because factory overhead consists of many diverse expenses there exist cost control and cost allocation problems.

TYPES OF OVERHEAD COSTS

Costs must be properly classified and accounted for. There must be accurate classification of

overhead costs into fixed and variable categories to properly forecast overhead for the year. Fixed costs are expenses that remain constant in total regardless of changes in activity within a relevant range. Examples are rent, insurance, and taxes. Fixed cost per unit changes as volume changes. Fixed costs must be properly allocated.

Variable costs are expenses that vary in total in direct proportion to changes in activities, such as machine hours and labor hours within a relevant range. Examples are direct materials and gasoline expense based on mileage driven. Variable cost per unit is constant.

Variable overhead is typically expressed as standard unit allowances. Variable costs are typically harder to predict than fixed costs. For example, it is harder to predict fuel costs and health care costs than monthly rent and straight-line depreciation on a fixed asset.

Semi-variable (mixed) cost is one that varies with changes in volume but, unlike a variable cost, does not vary in direct proportion. In other words, this cost contains both a variable and fixed component. Examples are the rental of a delivery truck, where a fixed rental fee plus a variable charge based on mileage is made; and power costs, where the expense consists of a fixed amount plus a variable charge based on consumption.

The following factory overhead items fall in the variable cost category:

Variable Factory Overhead

Supplies	Receiving Costs
Fuel and Power	Overtime Premium
Spoilage and Defective Work	

The following factory overhead items fall in the fixed cost category:

Fixed Factory Overhead

Property Taxes	Rent on Factory Building
Depreciation	Indirect labor
Insurance	Patent Amortization

The following factory overhead items may be considered mixed costs:

Mixed Factory Overhead

Supervision	Maintenance and Repairs
Inspection	Workmen’s Compensation Insurance
Service Department costs	Employer's Payroll Taxes
Utilities	Rental of Delivery Truck
Fringe Benefits	Quality Costs
Cleanup costs	

Indirect materials may be budgeted based on indirect materials consumed previously. Indirect labor should be budgeted based on the nature of the jobs. Indirect labor can be computed by measuring past costs relative to factory manhours. Indirect labor may range from 15 percent - 80 percent of direct labor depending upon the type of business.

Power, heat, and light often vary in direct proportion to production volume. Power allowance should be given to new equipment and for variation in expected machine hours and employee work hours. Power should take into account the factory square footage and layout. Repairs and maintenance are significant and may aggregate 5 percent - 10 percent in many companies. Repair budget estimates should consider the condition of the machinery and equipment. Additional repair should be budgeted for new additional equipment that might be needed.

The purpose of repairs and maintenance cost control is to obtain the lowest possible cost in the long-term, consistent with efficient plant operation. There is a joint responsibility between the maintenance and production departments. Repairs and maintenance should be segregated between (1) routine and repetitive (e.g., preventive maintenance, oil change) and (2) nonroutine and irregular (e.g., replacing roof, installing new motor for machine). There should be a separate budget for each of these two major classifications.

Maintenance expense reports should be kept by item of machinery, type of maintenance, and category of repair. A typical maintenance expense exception report appears in Exhibit 1.

EXHIBIT 1

MAINTENANCE EXPENSE—EXCEPTION REPORT

Repair Order Number	*Explanation*	*Actual*	*Budget*	*Variance*	*Percent*
1	Repair Machine B	$10,000	$10,000	$ 500	5%
2	Reinforce Machine B flooring	6,600	6,000	6000	10
Total		27,100	16,000	6,500	15%

By keeping track of the maintenance costs by machine category you can determine where the problems lie and what corrective action may be needed. Cost savings in repairs and maintenance may be very substantial. A control problem is the divided responsibility between production and maintenance staffs.

One purpose of controlling maintenance costs is to obtain the lowest possible cost

consistent with effective plant and equipment operation. Cost control may be achieved through better quality maintenance efforts, better installation of machinery, preventive maintenance, and more frequent inspections. Factory office expense considers production and record keeping that may affect the office routine.

Illustrative factory overhead budgets appear in Exhibits 2 and 3.

EXHIBIT 2
ABC COMPANY
FACTORY OVERHEAD BUDGET I
FOR THE YEAR ENDING DECEMBER 31, 20X2

Itemization	*Amount*
Indirect labor	$100,000
Indirect materials	40,000
Insurance	20,000
Repairs and maintenance	50,000
Payroll taxes	30,000
Heat and light	10,000
Property taxes	15,000
Depreciation	5,000
Total	$270,000

EXHIBIT 3
ABC COMPANY
FACTORY OVERHEAD BUDGET II
FOR THE YEAR ENDING DECEMBER 31, 20X2

	Plant X	*Plant Y*	*Plant Z*	*Total*
Direct Costs				
Taxes				
Royalties				
Oil				
Total Direct Costs				
Indirect Costs				
Labor				
Maintenance				
Insurance				
Supplies				
Travel				
Power				
Total Indirect Costs				
Total Costs				

ALLOCATION
Variable overhead can be assigned to periods fairly accurately, while fixed overhead allocation is more arbitrary. The responsibility for variable overhead is primarily with operating managers while the responsibility for fixed overhead is primarily with general managers.

TOTAL COST MANAGEMENT
Total cost management (TCM) is the management of all the company's resources and activities that use resources. There is a focus on operations, activities, functions, circumstances, events, and conditions that "drive" resource consumption costs. An objective of total cost management is to eliminate those activities not having value.

STATIC VERSUS FLEXIBLE BUDGET
A static budget has two characteristics:

1. It is geared toward only one level of activity, and
2. Actual results are always compared against budgeted costs at the original budget activity level.

A production manager has two responsibilities to discharge in the performance of his duties: production control and cost control. Production control is involved with assuring that production goals in terms of output are met. Cost control is involved with assuring that output is produced at the least possible cost, consistent with quality standards. These are different responsibilities and they must be kept separate in attempting to assess how well the production manager is performing. This points out that the main difficulty with the static budget is its complete failure to distinguish between the production control and the cost control dimensions of a manager's performance.

There are four problems involved in overhead cost control. First, manufacturing overhead is usually comprised of many separate costs. Second, these separate costs are often very small in dollar amount, making it highly impractical to control them in the same way that direct materials and direct labor costs are controlled. Third, these small, separate costs are often the responsibility of different managers. And fourth, manufacturing overhead costs vary in behavior, some fixed, some variable, and some mixed in nature. Most of these problems can be overcome by the use of a flexible budget. Flexible budgets always outperform static budgets from a managerial cost control point of view.

A flexible budget differs from a static budget on two points. First, it does not confine itself to only one level of activity, but rather is geared toward a range of activity. Second, actual results need not be compared against budgeted costs at the original budget activity level. Since the flexible budget covers a range of activity, if actual costs are incurred at a different activity level from that originally planned, then the manager is able to construct a new budget, as needed, to compare with actual results. Hence, the term flexible budget. In sum, the characteristics of a flexible budget are:

1. It is geared toward all levels of activity within the relevant range, rather than toward

only one level of activity.

2. It is dynamic rather than static. It can be tailored for any level of activity within the relevant range, even after the period is over. That is, a manager can look at what activity level is attained during a period and then turn to the flexible budget to determine what costs should have been at that activity level.

Once the flexible budget has been prepared, the manager is ready to compare actual results for a period with the comparable budget level within the relevant range. The manager is not limited to a single budget level as with the static budget.

The basic idea of the flexible budget approach is that through a study of cost behavior patterns, a budget can be prepared that is geared to a range of activity, rather than to a single level. The basic steps in preparing a flexible budget are:

1. Determine the relevant range over which activity is expected to fluctuate during the coming period.
2. Analyze costs that will be incurred over the relevant range in terms of determining cost behavior patterns (variable, fixed, or mixed).
3. Separate costs by behavior, determining the formula for variable and mixed costs.
4. Using the formula for the variable portion of the costs, prepare a budget showing what costs will be incurred at various points throughout the relevant range.

It is important to select an appropriate activity base for preparing a flexible budget. For example, choose to use units of production as the activity base for developing a flexible budget. Rather than units of production, you could have used some other base such as direct labor-hours or machine-hours.

What is “the best” in terms of an activity base will vary from firm to firm. There are at least three factors to be considered in the activity base decision:

1. The existence of a causal relationship between the activity base and the overhead costs.
2. The avoidance of dollars in the activity base itself.
3. The selection of an activity base that is simple and can be easily understood.

There should be a direct causal relationship between the activity base and a company’s variable overhead costs. That is, the variable overhead costs should vary as a result of changes in the activity base. In a machine shop, for example, one would expect power usage and other variable overhead costs to vary in relationship to the number of machine-hours worked.

Machine-hours would therefore be the proper base to use in the flexible budget. Other common activity bases include direct labor-hours, mileage driven by salespersons, contacts made by salespersons, number of invoices processed, and so on. Any one of these could be used as the base for preparing a flexible budget in the proper situation.

Whenever possible, the activity base should be expressed in units rather than in dollars. If dollars are used, they should be standard dollars rather than actual dollars. The problem with dollars is that they are subject to price-level changes that can cause a distortion in the activity base if it is expressed in dollar terms.

The activity level should be simple and easily understood. A base that is not easily understood by the manager will probably result in confusion and misunderstanding rather than serve as a positive means of cost control.

Flexible (variable) budgets may be used in manufacturing, selling, and administrative activities of the business. Flexible budgeting is used for cost control, cost estimation, and profit planning. Variable budgets are more suitable if there are recurring operations, heterogeneous expenses, and if output may be appropriately measured. A variable budget is not needed if there are only fixed costs. The purpose of the variable budget is to identify how much an expense item in a responsibility center is affected by the amount of work conducted in that center.

It is rare that planned volume will be the same as actual volume. Thus, expected costs will differ from actual costs solely because of the difference between projected and actual activity. A flexible budget acts as a tool for cost control because it reveals what costs should be at various production levels. The more unstable the industry, the greater the need for flexible budgets. The activity base should be minimally impacted by variable factors except for output. The activity base to apply factory overhead may be based on units, direct labor hours, machine hours, pounds, and so on.

In today's production industry, a successful manager must preserve, conserve, qualify, and truly manage the resources available. The flexible budget is recognized both as a plan for allocating resources and as a process through which the plan is controlled. Besides, flexible budgeting can result in information that can help in understanding and controlling the causes of variances; it also can indicate which cost overruns result from factors beyond your control and which are manageable.

Budgeting forces managers to think about a firm's strengths and weaknesses and provides a way of measuring a firm's performance within a specified fiscal framework. For many firms, flexible budgeting is a more effective approach than static budgeting. A flexible budget allows firms to adjust capital requirements to business demands; therefore, flexible budgets are more useful, especially to firms that are growing rapidly.

For example, the following *flexible budget formulas* can be developed for various overhead items:

Factory overhead costs	Formula
Electricity	$50 + $10 DLH
Maintenance	$100 + $15 DLH
Supervisors' salaries	$5,000 per month
Indirect materials	$8 per DLH
Factory depreciation	$7,000 per month

CONTROL AND ANALYSIS

Budgetary control must be simple and comprehensible to operating managers. However, budgeting overhead is more difficult than direct material and direct labor because the responsibility for control of overhead is widely disbursed within the company. Overhead cost items behave differently with changing volume and involve long-term commitments. There are many nominal items of cost making up overhead and many different sources and methods of overhead items.

A determination should be made as to which factory overhead is controllable or uncontrollable to operating managers. Flexible budgeting is an effective control tool. Cost control is effective *before* costs are incurred, not after cost incurrence. Cost controls should be implemented over cost drivers. Costs must be assigned based on responsibility for control purposes and should be segregated by department.

Stringent control may be kept over fixed overhead, but variable overhead costs are more flexible. Many factory overhead costs are the responsibility of general upper management such as costs for plant and equipment, leases, pensions, and salaries of production executives. A company may adopt a policy that a factory overhead cost will not be incurred that exceeds the budget limit, unless it is approved. There should be a running balance of overhead expenditures for control purposes. There should be a timetable set for each project, and an examination of the relationship between maintenance and production workers.

CONCLUSION

This chapter has emphasized manufacturing budgets. The process involves developing a sales forecast and, based on its magnitude, generating production and manufacturing expense budgets needed by a specific firm. Once developed, the budgeting system provides management with a means of controlling their activities and of monitoring actual performance and comparing it to budget goals.

Cost of goods manufactured equals all manufacturing costs incurred during the period, plus beginning work-in-process inventory, minus ending work-in-process inventory. A cost of goods manufactured budget is therefore based on materials, direct labor, factory overhead, and work-in-process.

A comprehensive profit planning and control program involves budgeting the materials and parts used in the production process. The budgetary process involving manufacturing expenses includes the material usage and purchase budgets, direct labor budgets, and factory overhead budgets. This chapter discussed the procedures for materials usage and purchases and the ways in which direct labor and factory overhead are budgeted.

CHAPTER 11
BUDGETING FOR SALES, ADVERTISINBG, AND DISTRIBUTION EXPENSES

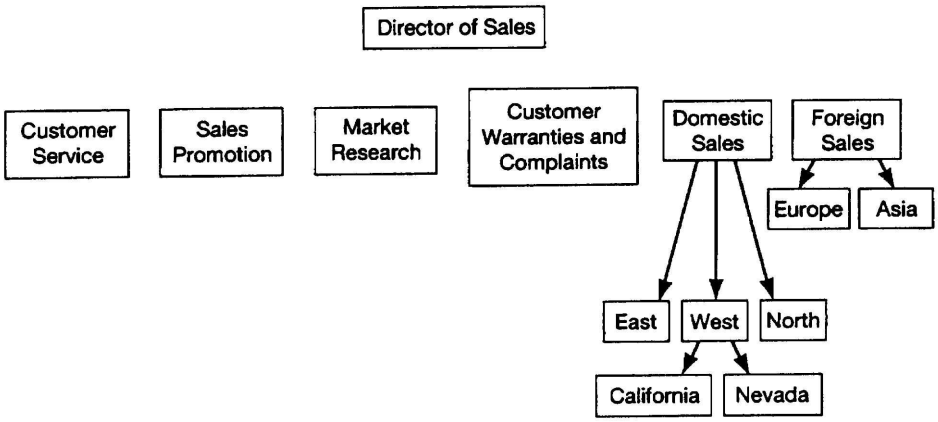
LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Understand the structure of a sales division
- Prepare marketing budgets and selling expenses budgets
- Discuss the procedures for developing selling expenses budgets
- List three popular methods for developing advertising budgets and explain each
- Identify some measures of advertising effectiveness
- Prepare performance reports for marketing personnel
- Prepare a budget for distribution expenses

Before presenting the budgeting aspects for a marketing department, it would be informative to review Exhibit 1 which shows the usual organization of a sales division.

EXHIBIT 1
STRUCTURE OF A SALES DIVISION



A marketing manager needs a promotion and advertising plan, selling expense plan, and marketing plan. Coordination should exist between the sales plan and the marketing plan. Sales promotion expenses should be budgeted by product, activity, media, territory, and salesperson. Authorization may be needed for unusual marketing expenditures.

Direct costs are directly traceable to a manager's segment while indirect costs are general charges that are allocable in some way to each segment. The unit cost of an operation equals total expenditures divided by units of measure.

The manager should consider the following cost categories: cost per order received, cost per order filled, cost per item handled, cost per customer account, transportation cost (e.g., auto, plane, train) per month, and cost per mile by category.

The number of salesperson calls and sales per call should be budgeted and then compared to actual calls and sales per call. Variances should be analyzed.

The manager should determine if a large percentage of products, orders, or customers generate a small portion of sales. Marketing expenses typically increase in proportion to the amount of customer orders and products, not sales dollars. A change in sales mix can have a significant affect upon profitability.

The sales manager may attempt to protect profits by increasing selling prices when costs are increasing or sales volume is decreasing. However, there are circumstances in which selling prices may not be increased because it is either impractical or prohibited. Examples are government price controls, high degree of competition (e.g., airlines), and poor economic conditions.

This chapter discusses budget preparation, and analysis and control over marketing costs including selling expenses, advertising and sales promotion, distribution costs, packaging, and travel and entertainment.

MARKETING BUDGETS

The marketing budget depends on the type of product or service, competition, market share, type of customer, costs to obtain and maintain an account, territory, anticipated sales calls, distribution channel, order size and frequency, and promotion efforts. Industry standards may be referred to when preparing marketing budgets.

Budgets aid in planning sales efforts. Sales may be budgeted by product, service customer, territory, and salesperson. Budgets should consist of sales volume and sales dollars by salesperson broken down by territory.

A lump-sum appropriation may be made consisting of a maximum amount of expenditure. Controllable and noncontrollable expenses should be identified.

A budget may be based on the following:

Type of Expenditure	*Budgeting Basis*
Automobile	Mileage
Lodging, food, and telephone	Daily allowance
Other	Special authorization

A typical budget for a marketing division is shown in Exhibit 2.

EXHIBIT 2
MARKETING DIVISION BUDGET

Department	Type of Budget	Current Year Quarter 1	2	3	4	Total	Prior Year	Increase (Decrease)
ADVERTISING AND PROMOTION PROJECT								
Illinois								
New Jersey								
Florida								
DIRECT SELLING ADMINISTRATIVE								
West								
East								
North								
South								
Total								
STORAGE AND WAREHOUSING STANDARD								
New York								
California								
Pennsylvania								
Michigan								
ADMINISTRATIVE								
General and Administrative								
Market Research Project								
Customer Relations Administrative								
Branch Office Administrative								
TOTAL								

SELLING EXPENSES

Selling expenses are those that are required: (1) to make a sale (sales commissions, salesperson salaries, advertising, and sales promotion); and (2) to distribute the merchandise to the customer (order processing, handling, storage, and delivery charges). The manager should appraise the efficiency and effectiveness of order getting and order filling activities.

Sales may be appraised by customer, product, service, salesperson, sales method, territory, and distribution outlet. Selling effort is subject to diminishing returns because after a certain point additional sales volume from selling efforts do not justify the additional cost and time. Further, the sales manager should set sales personnel requirements by number and grade.

The sales manager is responsible for the selling expense budget. The variable-fixed breakdown is highly recommended. Many selling expenses may be budgeted based on a percentage of sales including salesperson commissions and salaries, sales promotion, distribution (including freight out), travel, entertainment, warranties, and training. However, some selling expenses may be constant or initially set by the sales manager such as rent and advertising. A fixed appropriation of selling expenses may be irreducible because a minimum amount is needed to function. Selling expenses may be budgeted, reported and analyzed by department, division, product, service, class of customer, territory, time period (e.g., monthly), transaction, distribution outlet, sales method, and source of sale. There should be a monthly breakdown of the target selling expenses in the budget for control and monitoring purposes.

There should be a budget provision for increased training costs if additional salespeople are to be hired. Standardized activities are repetitive and subject to quantitative measurement.

Examples are field selling expenses and storage handling charges. Costs should be segregated by function. The field selling expense may be based on a per diem standard allowance. For example, auto expense may be at a standard mileage rate, telephone may be at a monthly allowance, and entertainment may be at a per diem rate.

Exhibit 3 graphs the ratio of selling expenses to net sales over a representative time period.

EXHIBIT 3
SELLING EXPENSE TO SALES

Exhibit 4 presents an illustrative field selling expense budget.

EXHIBIT 4
BUDGETED FIELD SELLING EXPENSES

Salesperson Name and Number _____
Sales Territory _____

Description	Allowance	Actual	Budget	Over (Under) Budget	Cumulative Actual	Cumulative Budget	Over (Under) Budget Amount	Over (Under) Budget Percent
Days traveled								
Field Selling Expenses								
Food $20 per diem								
Lodging $100 per diem								
Telephone $15 per diem								
Valet $6 per diem								
Travel								
Airplane								
Railroad								
Auto $.30 per mile								
Conventions								
Promotion and Entertainment								
$50 per diem								
Other $10 per diem								
Total Expenses								
Selling Ratios:								
Cost per travel day								
Cost per telephone call								
Sales generated per call								
Comments:								

Exhibit 5 shows a typical monthly performance report for selling expenses broken down by responsibility.

EXHIBIT 5
MONTHLY PERFORMANCE REPORT - SALES MANAGER X

For Month			Year-to-Date		
Actual	Budget	Variance	Actual	Budget	Variance

If in the monthly analysis a selling expense item is heading over budget for the year, the manager notes this in the performance report after discussing it with the responsible party. There are the following three options:

1. To request a revision of the target budget.
2. To request an allocation from a contingency fund, if any.
3. To take action to keep the expense on target.

An illustrative budget report for a sales manager is shown in Exhibit 6.

EXHIBIT 6
GENERAL SALES MANAGER BUDGET REPORT

	Current Month		Cumulative	
	Actual	Over (Under) Budget	Actual	Over (Under) Budget
Number of salespeople				
Costs				
Rent				
Insurance				
Travel				
Promotion and entertainment				
Depreciation				
Salaries				
Fringe benefits				
Dues				
Supplies				
Total Expenses				
Percentage of net sales				

A typical sales engineering project budget report appears in Exhibit 7.

EXHIBIT 7
SALES ENGINEERING PROJECT BUDGET REPORT

Project Number	Project Name	Hours	Actual Costs by Type	Budgeted Costs by Type	Variance	Estimated Costs to Complete	Commitments

ADVERTISING AND SALES PROMOTION

Advertising may be local, regional, national, or international. The manager must determine how much, when, where and how advertising should be used to obtain the optimum benefit. Advertising depends on product leadership, degree of competition, market economy, and financial condition. It has to be coordinated with sales and production. Responsibility for advertising may be assigned to specific individuals, where appropriate.

The major considerations in budgeting, analyzing, and controlling advertising are cost; type and number of audience; advertising frequency; consistency in meeting product, price, and distribution; and demographics.

The highest percentage of a marketing budget is usually reserved for advertising. The advertising budget helps the marketing manager plan how much and where to spend. The advertising budget depends on territories, customers, products, services, activities, programs, and media. Advertising should be sufficient to accomplish objectives such as growth rate. After the advertising budget has been determined, funds have to be assigned to specific items. The

advertising budget may be broken down in several ways including: (1) departmental budgets, (2) total budget, (3) calendar periods, (4) media, and (5) sales areas.

The marketing manager should set up a contingency fund so there is flexibility in the advertising budget. The fund can cover special circumstances such as the introduction of a new product, specials available in local media, or sudden actions by competitors.

The objectives of advertising are to make potential customers aware of the products or services and how to use them, improve market share, develop new markets, stimulate new products, project a favorable image and brand loyalty, counteract bad publicity, foster a negative image for competitors or counteract competition, promote sales, increase selling price, reduce selling costs, and counteract contemplated government regulation,.

There are various kinds of advertising including:

- Promotions of a particular brand
- Mass advertising to a large population cross section
- Class of customer
- Message about the company in general rather than about a specific product or service

The types of advertising media include directories (phone, etc.), print (newspapers, magazines, trade publications), direct mail, outdoor, broadcasts (television, radio), door-to-door solicitation, specialty items, and movies.

Sales promotion, which is directly related to advertising, is needed for future sales. It may include special programs, store fixtures, and trade shows.

The sales manager will have to justify his or her advertising budget to upper management. The sales manager will have to state objectives, how to accomplish them, and the cost of each component of the program. The factors to be considered in the advertising budget include profit per product, estimated advertising expense per unit, and projected additional sales volume resulting from incremental advertising expenditures.

There are various ways to determine how much should be spent on advertising and sales promotion. These include arbitrary appropriation such as that based on prior years' advertising, all available funds, competitive parity, percentage of sales or profit, unit sales (fixed sum per unit suitable for uniform or a few products such as specialty goods), return on investment, objective-task method, and a lump-sum (suitable for established products with a predictable track record and stable environment). Advertising for necessities should be expanded in recessionary years while advertising for luxuries should be emphasized in strong economic periods. Advertising may reduce direct selling costs.

Let us now discuss the following three popular methods:

1**. Percentage of Sales or Profit.**
This is a widely used approach that bases the advertising budget on a percentage of sales. Thus, advertising will be consistent with the budgeted or prior years' revenue (e.g., 5 years' average sales). Advertising may also be based on a percent of prior years' net profit or gross margin.

(Units x Price) x Percentage Allocated
or
Profit x Percentage

2. **Unit Sales Method**.
Under this approach, a fixed sum is established for each unit of product to be sold, based on experience and trade knowledge of how much advertising is required to sell each unit. The budget is basically based on units sold instead of dollar sales. For example, if $2 is allocated for each unit of product and there are 20,000 expected units, $40,000 would be allocated to advertising.

3. **Objective-Task Method**.
The method relates the advertising appropriation under typical conditions and in the long run to sales volume, in order for earnings and revenue to avoid being drained.

Exhibits 8 and 9 show typical advertising budgets.

Exhibit 8
Advertising And Promotion Expense Budget

	Amount
Radio advertisements	
Television advertisements	
Newspaper advertisements	
Magazine advertisements	
Shopper advertisements	
Telephone advertisements and directories	
Catalogues	
Personal demonstrations	
Direct mail	
House-to-house solicitation	
Samples	
Exhibits	
Total advertising and promotion expenses	

EXHIBIT 9
ADVERTISING BUDGET

Classification	Project Budget	Actual Expenditures	Commitment	Total	Estimated Cost to Complete	Balance Available

There should be a comparison between successive budgeted advertising cost and anticipated incremental profit by program. Exhibit 10 shows the impact of successive advertising outlays on earnings.

EXHIBIT 10
IMPACT OF INCREASED ADVERTISING ON PROFITS

(1) Additional Advertising Expenditures	(2) Additional Sales Volume	(3) Additional Profit per Unit	(4) = (1) ÷ (2) Incremental Advertising Cost per Unit	(5) = (3) − (4) Unit Incremental Profit	(6) = (2) × (5) Profit
$10,000	10,000	$1.50	$1	$.50	$5,000
10,000	15,000	1.40	.67	.73	10,950

Measures of advertising include:

- Trend in advertising cost to sales
- Advertising cost per unit sold
- Advertising cost per sales dollars
- Advertising cost per customer
- Advertising cost per transaction
- Advertising cost by product, media, and territory

The advertising plan should be reviewed periodically to assure that the "right" products are being emphasized. For example, the sales manager would not want to promote obsolete, unsuccessful, or hazardous products.

The marketing manager can evaluate the effectiveness of advertising by reviewing sales and profits before, during, and after promotion. The manager can monitor which customers are buying through coupons and reply cards. An analysis of competitors' activities should be made as they affect the company. Further, cost information for advertising programs can furnish data to make decisions of future media channels.

The marketing manager should appraise the effectiveness of a particular media such as by examining the cost per thousand (CPT). CPT is defined as the cost of advertising per thousand individuals reached by the media.

$$\text{Cost per Thousand} = \frac{\text{Cost of Dollars}}{\text{Circulation in Thousands}} \times 1{,}000$$

After the marketing manager has selected an appropriate media to use, the following questions should be answered. How essential is creativity? Is there a way to buy space and time that will stretch the advertising budget? How should the product or service be positioned? Creativity involves attention getting such as with color, print size, layout, and contrast. Space and time are essential if the marketing manager wants to reach the target audience. For example, what days and hours do your customers watch television? If you sell sports equipment, then Saturday and Sunday are the best times. The marketing manager should properly position advertising toward those consumers most likely to buy the product. The marketing manager should also segment the market by demographics such as social class, age, gender, education, and income.

Advertising standards should be established to control costs. Advertising standards may be based on cost per sales dollar, cost per sales transaction, cost per account, cost per unit of space, and cost per request for information.

Variances between budget and actual costs should be examined as a control measure. Exhibit 11 presents a variance analysis report for advertising and sales promotion.

EXHIBIT 11
BUDGET AND ACTUAL ADVERTISING AND SALES PROMOTION

Media Classification	Budget	Actual	Commited Funds	Total	Estimated Cost to Complete	Total Cost	Balance Available
Radio	$700	$500	$100	$600	$50	$650	$50
Television	630	400	150	550	60	610	20
Magazines	860	600	150	750	70	820	40
Newspapers	1,000	800	100	900	30	930	70
Displays	500	400	50	450	40	490	10
Catalogs	600	500	50	550	50	600	0
Direct Mail	400	300	60	360	20	380	20
Total	$4,690	$3,500	$660	$4,160	$320	$4,480	$210

Exhibit 12 presents a typical budget comparing sales by brand for the current month and cumulatively. Variances between budget and actual figures are expressed in dollars and percentage. Exhibit 13 shows an analysis of product revenue.

EXHIBIT 12
SALE BY BRAND

	Month		Variance		Cumulative			
Brand	**Budget**	**Actual**	**Dollar**	**Percent**	**Budget**	**Actual**	**Dollar**	**Percent**
Brand X—Green								
Brand X—Yellow								
Brand X—Blue								
Total Brand X								
Brand Y—Red								
Brand Y—Orange								
Total Brand Y								
Brand Z—Small								
Brand Z—Regular								
Brand Z—Large								
Brand Z—Extra Large								
Other Brands								
All Brands								

EXHIBIT 13
AN ANALYSIS OF PRODUCT REVENUE
SOUTHERN TERRITORY
JUNE 1-30, 20X2

	Product W		Product X		Product Y		Product Z		Total
Week	Units	Dollars	Units	Dollars	Units	Dollars	Units	Dollars	Dollars
June 1–7									
June 8–14									
June 15–21									
June 22–30									
Total Actual									
Total Budget									
Variance									
Units									
Dollars									

In comparing advertising costs to those of competing companies, reference may be made to Advertising Age.

DISTRIBUTION COSTS

Distribution costs are costs to sell or market products in different territories. Distribution costs are the costs for activities after goods are produced until they are received by customers. Marketing managers are responsible for budgeting and controlling distribution costs. Distribution costs include packaging, advertising, transportation, credit and collection, warehousing and storage, salesperson salaries and commissions, promotion, and market research. A comparison should be made of the trend in distribution costs to total costs. There should be coordination of distribution policies in the overall marketing plan including sales promotion, advertising, direct selling, warehousing, storage, and transportation.

Distribution factors and selling effort should be combined in such a way as to maximize sales and profits. There is an interrelationship between the distribution cost budget and the manufacturing and financial budgets. The distribution cost budget is interrelated to the sales budget. Distribution costs should be budgeted in total and for each distribution activity. Distribution costs and efforts should be increased in those areas providing the most profitability. Budgeted distribution costs depend on the following for each territory: sales effort needed per dollar of cost, potential customers, buying power, population density, size of geographic area, and competition.

The manager must decide: (1) how much to pay for each type of distribution; and (2) the timing and classification of distribution expenditures.

A typical distribution cost budget appears in Exhibit 14. The distribution budget aids in coordinating distribution policies, and in deriving the best combination of distribution resources including sales volume, selling prices, and selling effort. Distribution costs should be budgeted by function or activity, territory, salesperson, program or project, product, call, and type of selling effort. Distribution costs should be budgeted in absolute dollars and as a percentage of net sales. The budget promotes cost control.

EXHIBIT 14
DISTRIBUTION COST BUDGET

Direct selling		$300,000
Transportation costs		
Truck	$ 50,000	
Rail	60,000	
Air	130,000	240,000
Storage		40,000
Market research		20,000
Other		10,000
Total distribution costs		$ 610,000

Exhibit 15 presents an illustrative project budget.

EXHIBIT 15
PROJECT BUDGET REPORT

Number	Name	Hours	Salaries	Other Expenses	Total	Commitments	Estimated Cost to Complete	Total Cost	Project Budget	Under or Over Budget

Distribution efforts should be based on market potential. Distribution costs may be reduced by modifying geographic areas to reduce selling cost and obtain more coverage,

changing customer mix, altering distribution channels, modifying product mix, reassigning salespeople, and changing the method of sale.
Distribution cost for planning and control should be identified by responsibility, type of expenditure, order size, activity, program, territory, segment, distribution channel, and method of sale.

There should be a comparison of budget to actual distribution costs. Variances should be determined and analyzed. Further, distribution costs should be compared to those in competing companies.

ANALYSIS AND EVALUATION OF DISTRIBUTION COSTS
Distribution cost analysis has as its objective obtaining the optimum distribution policy. Distribution costs should be appraised by activity or function to promote planning and control. Distribution cost analysis may be made by product or service, segment (department, store, branch, etc.), territory (state, city, district, county, etc), customer type, order size, distribution channel (manufacturer, wholesaler, retailer, direct to customer), sales terms (cash, installment), salesperson, method of delivery (store delivery, over-the-counter), and method of sale (mail order, company store, salesperson, house solicitation).

There should be a comparison of each individual distribution cost to sales, such as transportation to sales. A higher ratio is unfavorable because a larger distribution expense is required for each sales dollar. Higher ratios mean less productivity. When distribution efforts are recurring and routine, it is useful to compare actual to budgeted costs for variance determination. The variances are then investigated as to cause and appropriate action taken, if needed. In addition, a comparison should be made between the distribution costs in the company to those of competing companies. The differences should be analyzed.

CONTROL OVER DISTRIBUTION COSTS
Distribution cost control involves functional responsibility and cost objectives. Costs should be assigned by responsibility center. Distribution costs by territory may be controlled by reorganizing the territory so that effort is more in line with benefits (e.g., selling expenses may be reduced with better coverage), eliminate unprofitable territories, change the method of sale, reassign salespeople, alter distribution channels, modify advertising policy by territory, change warehouse facilities, and identify neglected customers who may buy.

PACKAGING
Product development may take into account packaging changes and new kinds of packaging. Repackaging may be designed to save costs. The sales manager must decide on product size and form.

TRAVEL AND ENTERTAINMENT
The budget for travel and entertainment is prepared by the sales manager after obtaining input from salespeople. The manager should evaluate entertainment expenses. Are they proportionate to the revenue obtained by salesperson, customer, and territory?

BUDGET MEETINGS

At budget meetings, the manager should present a reasonable basis for his budget expectations. He should give an impression of being prepared, knowledgeable, and in control. For example, a possible inconsistency in his or her presentation may raise doubts. A case in point follows. A manager proposes a slight budget increase in revenue because of a recession but at the same time requests substantially higher expenditures because of inflation. The manager must give the impression that he knows the specific problems, and opportunities. He should avoid being thrown-off course at the meeting with irrelevant and unimportant items. The manager should know when and where to hold his position, and when he must consider compromise or change. Everything should flow smoothly during the meeting.

The manager does not want to give upper management the impression he or she is rushing through the budget or has not given sufficient preparation to it.

CONCLUSION

The marketing manager must prepare budgets for marketing costs so proper planning may occur. These marketing costs include selling, advertising, and distribution. It is better to budget expenses based on a percentage of budgeted sales than prior years' sales because the current environment is being considered. *Note:* A flexible budget approach is appropriate for a marketing budget because each contains some elements that vary with the activity level and some that do not.

What held in the past may not hold in the current year. A thorough analysis and evaluation of marketing costs should be made to determine if they are excessive, such as by comparing each major expense category to sales. A good degree of control is necessary to reduce marketing costs, where possible. Problem areas must be identified and rectified. In this connection, the marketing manager should assign specific responsibilities to subordinates, such as salespeople by territory or customer.

If sales are increasing due to higher sales prices but sales units is about the same, only a few marketing expenses will increase. The work volume to process orders and the delivery costs will be about the same. However, advertising and promotion costs will increase to overcome sales resistance to the higher prices. When sales volume increases, most marketing expenses increase. However, advertising and sales promotion may not increase in the same proportion to sales volume. If there is increased sales volume from larger orders only from existing customers, the collection, credit, and delivery costs will not increase in proportion to sales.

Analyze the long-term benefits from charitable contributions made to promote the image of the business for sales purposes.

CHAPTER 12
BUDGETING GENERAL AND ADMINISTRATIVE EXPENSES

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Give examples of administrative expenses
- Describe the budget process for general and administrative expenses
- Explain some approaches to budgeting general and administrative expenses

The manager may identify general and administrative expenses to a particular function, activity, product line, service, segment, unit or other responsibility center. Managers may be assigned responsibility for administrative costs. Administrative departments include general administration, personnel, legal, insurance, and computer services.

Administrative expenses relate to the supervision of all major activities of the business rather than any one specifically. Responsibility should be assigned to specific managers for administrative expenses.

Some G&A expenses are unique and unpredictable. This makes the budgeting process more difficult and results in variances. Examples of administrative expenses are executive salaries and travel expenses, legal and accounting costs, office salaries, office rent, office expenses, office insurance, office postage, dues, depreciation expense on administrative assets, training, and contributions. An illustrative general and administrative expense budget appears in Exhibit 1.

This chapter will discuss administrative department budgets, budgetary process, and cost control and analysis.

ADMINSRATIVE DEPARTMENTS

Administrative departments include general administration, personnel, accounting, legal, insurance, computer services, and treasury. Administration is personnel existing because of the organization structure. Examples are office managers and staff. A typical administrative department budget appears in Exhibit 2.

BUDGETING PROCESS

The manager may budget general and administrative expenses based on specific plans and programs. Because most administrative expenses are fixed, an analysis of the historical record will typically provide a sound basis to budget them. The variable-fixed breakdown is highly recommended.

The budgeting of administrative expenses is difficult to plan and control. One approach is to establish acceptable ranges of costs as percentages of revenue to achieve target earnings. Another approach is to review administrative costs and determine how much should be allocated

to each area by using historical data. It is worthwhile to break general and administrative expenses into discretionary and non-discretionary costs. Discretionary costs such as bonuses are those that are not essential to satisfy short-term business goals. Discretionary costs are typically identified as targets for cutting when costs need to be reduced. The manager may budget rent simply by using the monthly rent figure. This figure should include an adjustment for cost of living increases, property taxes, and rent escalation clauses.

In budgeting salaries, multiply the number of employees by their monthly salaries. There should be included a provision for salary increases, sick leave time, vacation, holidays, and fringe benefits.

In budgeting taxes and licenses, use an historical percentage rate. Research city, state, and federal sources for potential increases. Divide by twelve months and apply it to each month of the budget. Payroll taxes can be approximated by taking a percentage between l0 and l5 percent of the gross payroll cost as the monthly budget.

In budgeting travel costs, determine what trips will be taken, where they will be taken, and who will be going. Avoid trips being taken on a whim. If only modest trips can be taken, take the total annual dollars and divide by twelve to determine the monthly budget. If extensive traveling is involved, calculate each month separately by the actual expected trips for each month.

EXHIBIT 1
GENERAL AND ADMINISTRATIVE EXPENSES BUDGET

	Prior Year					*Proposed Budget*	
	Budget	*Actual*	*Over (Under) Budget*			*Increase (Decrease) from Previous Year Budget*	
Item of Expense			*Amount*	*Percent*	*Request*	*Amount*	*Percent*
Public relations							
Industrial relations							
Finance							
Corporate planning							
Executive office							
Legal							
Office salaries							
Fringe benefits							
Insurance							
Payroll taxes							
Business conferences							
Patent expense							
Postage							
Rent							
Repairs							
Supplies							
Travel							
Employee relations							
Dues and memberships							
Computer							
Depreciation							
Entertainment							
Licenses							
Subscriptions							
Communications							
Total							

EXHIBIT 2
ADMINISTRATIVE DEPARTMENT BUDGET

	Amount
Headcount	
Professional	
Clerical	
Miscellaneous	
Total	
Payroll	
Professional	
Clerical	
Overtime	
Miscellaneous	
Total	
Employee Benefits	
Payroll taxes	
Insurance	
Miscellaneous	
Total	
Office supplies	
Rent	
Telephone	
Taxes	
Advertising	
Utilities	
Bad debts	
Office expense	
Insurance	
Travel	
Promotion and entertainment	
Total	

Office expense budgets should take into account proposed changes in office procedure, new forms, or records. Office postage should take into account expected changes in postal rates and volume of mail.

Credit and collection costs should consider economic conditions. Legal and accounting, and other professional costs, should take into account the cost of retainers and special services.

COST CLASSICIATION

General and administrative expenses may be fixed or variable. Although administrative expenses are usually constant, some relate to changes in activity. Bonuses to administrative personnel based on profits are considered a variable cost.

COMPENSATION ARRANGEMENTS

The staffing of the general and administrative group should be realistic. Work should be performed at reasonable cost. There should be a balance in workload among personnel.

Executive expenses may be fixed by the Board of Directors. Compensation of officers and directors is typically known in advance at the beginning of the year, and is therefore easy to

budget. Bonuses and incentives are often based on earnings which can be estimated.

General and administrative salaries can be reliably estimated because the names of employees and their salaries are known. The percentage of salary increases is stated in the contract or union agreement. Merit pay may be budgeted based on a percentage of payroll. Salaries should take into account cost of living increases. New hirees can be listed with their salary rates. Special arrangements should be noted. Fringe benefits may be budgeted based on salaries. Actuaries can estimate pension expense.

CONTRIBUTIONS
Contributions to recognized charities should be approved by the Board of Directors. An executive should be held responsible. The contribution may be stated per employee or as a percentage of net income.

FINANCIAL EXPENSES
Financial income and expenses may be based on the related financial instrument. Interest expense can be determined from the financial budget. The financial budget reveals the amount of debt which is the basis to compute interest expense. Interest expense may be budgeted based on the anticipated interest rate and the amount of the borrowing. Tax expense is based on the budgeted net income, and is estimated by the tax accountant.

OTHER EXPENSES
An estimate must be made of budgeted professional fees for attorneys, accountants, auditors, engineers, and consultants. The budgeted general and administrative costs will be determined by expected activities in other areas. For example, salaries may vary with production. Research will vary with sales and production. G&A expenses should include the cost of keeping excess or idle facilities.

EMPLOYEES
Specific individuals under the manager should be assigned responsibility and control for general and administrative expenses. Further, there should be a balance in workload among employees. Employee bonuses and incentives should be based on earnings.

CONTROL AND ANALYSIS
Administrative costs must be correctly classified as to source. There should be controls on costs and performance. Administrative expenses are controlled by top management decisions; they do not relate to production but rather are period costs. Administrative expenses must be kept within authorized limits.

General and administrative costs should be grouped by responsibility center before being distributed or allocated. Responsibility to individuals or executives should be assigned for G&A costs to accomplish control over them. Each G&A group must know their responsibility, limitations, and to whom they report. The output expected for a G&A group should be specified. Budgeted expenses must be substantiated with documentation. Proper supervision is needed for control. Productivity must be maintained at the required level. Control is less with administrative costs than production costs because many administrative positions are not subject to specific

measurement, standardization, or prediction.

Costs should be evaluated by type. Costs should be compared to sales over the years, and to competing companies. In the event that administrative costs are substantially increasing disproportionately to sales or production, the reasons why must be found and if necessary corrective action taken. Costs may also be related to direct labor hours, operating income, and number of transactions.

Cost reduction may arise from consolidation of duplicate or unnecessary activities. Control of G&A includes controlling overtime and "hidden" areas.

G&A costs should be analyzed by type. Past administrative expenses should be reviewed for propriety or necessity. If administrative costs are increasing significantly in disproportion to sales or production, the reasons should be identified. There should be a balance between G&A expenses and other corporate variables including total costs and sales. There may be a policy that G&A costs cannot exceed a specified percentage of sales (e.g., 10 percent of sales). Comparisons should be made of G&A expenses to sales over the years, to competing companies, and to industry norms. Some administration expenses may be related to revenue, direct labor hours, number of transactions, or operating income.

CONCLUSION

Productivity must always be kept in the administrative area. The manager must closely supervise to maintain control. The general and administrative expense budget should be carefully prepared and analyzed taking into account past history and the current environment.

CHAPTER 13
BUDGETING FOR RESEARCH AND DEVELOPMENT COSTS

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- List direct and indirect costs associated with R&D projects
- Identify the factors that need to be considered in R&D planning
- Define the product life cycle and explain its implication in R&D planning
- Prepare a R&D budget
- Prepare project status reports

Research and development (R&D) is needed to develop new products and services or to significantly improve existing ones in order to remain competitive and grow. R&D includes conceptual formulation and design, as well as testing in search for or evaluation of possible product or process alternatives; modification of the formulation or design of a product or process; design, construction and testing of preproduction prototypes and models; and design of tools and dies involving new technology.

There should be planning and control over R&D costs such as how much to spend, what to spend it on, and how to assure that the funds are being spent properly. The goal of R&D is to generate new or improved products to introduce or replace current ones. R&D should be accumulated by type of expenditure, by division, by department, and by responsibility center within a department. The budgets for technical departments is the sum of the total budget for all R&D activities, and supporting engineering services. The manager must constantly appraise R&D progress, success rate, problems, risks, staff, and facilities. R&D should primarily be based on long-run goals, competition, judgment, and financial capabilities.

R&D should be consistent with the goals of the division or department. R&D should be higher for high-technology divisions. A division with older technology typically spends less on R&D and more on engineering to sustain current products and processes. Technological objectives should be based on where the division wants to be in 3 to l0 years.

There should be realistic goals for R&D. R&D efforts should be adequate in quantity and quality. Each R&D project should involve detailed planning, cost control, and performance reporting.

R&D should result in a better existing product, new product, or reduction in production costs. R&D should preferably be directed toward the future rather than to maintain current products. Resources may be spent in the following areas: research and exploration, development, and sustainment.

R&D activities should be undertaken when the return obtained from such research justifies the costs incurred and risks assumed. In addition, R&D is worthwhile if the new product can be introduced before it is already obsolete or out of favor.

This chapter discusses the types of R&D costs, planning, establishing the proper funding level, preparation of R&D budgets, modifications to the budget, analysis and evaluation of R&D status, cost controls, risks associated with R&D efforts, and coordination of R&D policies within the company.

R&D COSTS

There are direct and indirect costs associated with R&D projects including:

- Personnel costs including those of independent consultants. In general, personnel costs range between 50-75% of R&D costs.
- Depreciation on R&D laboratory and equipment.
- Supplies and materials
- Subscriptions to journals and magazines
- Rentals
- Travel
- Professional membership fees and attendance at technical conferences
- Property taxes
- Outside contractor fees
- Cost of intangibles purchased from others

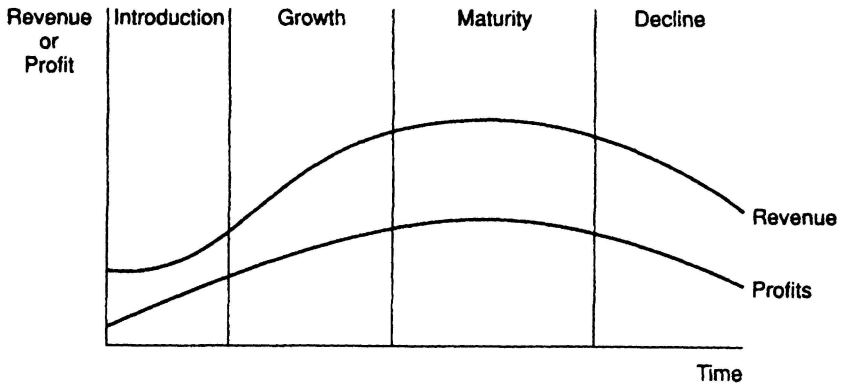
R&D PLANNING

In R&D, individual projects have to be planned, appraised, and controlled. Any project limitations have to be noted. The following should be considered:

- Progress of research efforts
- New and better products developed over the last 10 years
- The percentage of new products to total sales
- Average time required to proceed from the initial research stage (e.g., laboratory) to commercial production
- Cost/benefit of research
- Relationship between research and sales. Comparison should be made to success of competition in research (e.g., industry norms).

Exhibit 1 depicts the product life cycle.

EXHIBIT 1
PRODUCT LIFE CYCLE



FUNDING LEVEL

The manager must decide how much to fund research and which specific activities should be funded. The amount funded for research depends on how much support is needed to succeed, project priorities, number of programs desired, growth rate, size and capability of research staff, competition, trade and industry statistics, state of the economy, and political concerns.

The manager should set a minimum-maximum range for R&D funding. He or she should set forth what circumstances would change this range. Research must provide an acceptable return to be funded. Revised R&D calculations should be made when researchers request additional funding or time. The manager should determine if the request is with merit or just a waste of additional resources. The manager must decide whether to support the R&D project modification or drop the product.

The manager should give a high priority to fund developmental projects. These projects should be ranked after taking into account capital investment, expected costs, and anticipated earnings including forecasted royalty receipts.

R&D BUDGET

The R&D budget is based on an annual amount that the manager has decided on to commit to develop new and improved products. The amount of the budget depends on the anticipated benefits based on previous efforts and success, desired growth rate, size of the division, risk and uncertainties, diversification, competition, market share, consumer tastes, financial resources, physical facilities, availability of raw materials, productivity, safety, reliability, price profitability, efficiency, employee number and capability, time constraints, product life cycle, stability of research program, obsolescence, and technological aspects. A budget provision is needed so engineering keeps current products from becoming out-of-date.

The R&D budget may be based on the following:

- Estimated cost of specific projects
- A percentage of expected sales
- A percentage of current year and/or prior year sales
- A percentage of profit
- A percentage of operating income
- A percentage of investment in capital assets
- A percentage of cash flow
- R&D per unit
- R&D cost per hour equal to total R&D project costs divided by chargeable hours
- Product life cycle

The R&D budget should take into account the expected return on sales, return on investment (ROI), payback period, discounted payback period, net present value, and internal rate of return. A comparison should be made between the estimated ROI of a research project and its actual ROI. Variances should be computed and analyzed with corrective action taken when warranted.

R&D costs should be allocated by responsibility center and then to each project or program within that segment including support services. In preparing the budget, there should be a reconciliation of budget costs of research efforts with the total estimated cost of maintaining R&D facilities and operations.

Program budgeting is research-related or applies to technical jobs applicable to programs. It typically follows a study of work performed. If a proposal involving R&D cannot be scheduled, no budget should be prepared for the entire project. Instead, there should be a step-by-step budget allocating a specific amount for research work. Once the first step is completed, a budget allotment may be made for the second step.

Exhibits 2 and 3 present typical R&D budgets.

EXHIBIT 2
R & D BUDGET

Materials and Supplies

- Laboratory
- Equipment
- Repairs
- Total Materials and Supplies

Salaries

- Administrative
- Nonadministrative
- Technical staff
- Total Salaries

Other Direct Costs

- Membership Dues
- Depreciation
- Insurance
- Utilities
- Taxes
- Travel and Entertainment
- Total Other Direct Costs

Total Research and Development

EXHIBIT 3
R & D BUDGET

PROJECT	New Staff Required	Total Man-hours	Cost
Research			
Electronic 5			
Laser 3			
Hydro 1			
Completed Projects			
Total Research			
Development			
Tubes			
Gauges			
Testers			
Modes			
Total Development			
Total Project Budgets			
Administrative			
Patent			
Research			
Library			
General			
Total Administrative			
Grand Total			

ANALYSIS AND EVALUATION

R&D analysis involves looking at past, current, and future projects. Each R&D project should be thoroughly analyzed in terms of marketing, production, distribution, etc. There should be a priority ranking so that the best R&D projects are undertaken given the limitations of manpower, facilities, and financial resources.

R&D may be related to sales, profits, production, number of employees, labor hours, number of segments, entering new markets, expansion of product lines or services, and diversification attempts. The manager must evaluate the research program to determine whether it is technically sound. He or she must determine whether the research staff has the technical ability and resources to successfully undertake the project.

The manager should evaluate where R&D funds are being used, how successful the R&D undertakings are by category and type, where additional funding should be placed because of potential opportunities, and where less funding should be made because of unsuccessful and "problem" programs. The manager should evaluate R&D on a recurring, periodic basis, such as quarterly or semi-annually. Those projects having greater uncertainty or risk may be evaluated more frequently, such as monthly. The manager should prepare a project screening report evaluating proposed R&D in terms of marketing, production, technical, safety, legal and financial aspects. There should be progress points to appraise and track R&D efforts.

Performance standards for research should be used and compared to actual performance. Performance standards include number of patents received, cost per patent, cost per operation, cost per hour, number of tests and formulas, number of requisitions, and research hours by activity. There should be a comparison between the actual costs incurred by program or activity to the funds budgeted for each R&D program or activity.

The manager should keep track of the following with respect to R&D:

- R&D to net sales
- R&D by product
- Expected rates of return
- Estimated project costs
- Salaries to manhours
- Average R&D projects per period
- Research commitments

The manager should require R&D employees (engineers, scientists) to keep time sheets of hours spent by R&D project because a high percentage of R&D cost is in the form of labor.

Research programming examines research fields to be investigated and the depth of such coverage. There should be periodic R&D status reports presenting objectives, potential, priority classification, technical achievements, amount of expenditures, and schedule of
conformance.

Exhibit 4 present R&D project status reports.

EXHIBIT 4
PROJECT STATUS REPORT

Project	Project Identifier	Month				Cumulative to Date		Purchase Commitments	Estimated Cost to Complete		Total Cost	Project Budget	Cost (over) or under
		Man-hours	Salaries	Other Expense	Total	Man-hours	Amount		Man-hours	Amount			
PRODUCT IMPROVEMENTS													
Project A													
Project B													
Project C													
Project D													
Total													
NEW PRODUCT RESEARCH													
Project X													
Project Y													
Project Z													
Total													
SALES REVENUE													
Project P													
Project Q													
Total													
FUNDAMENTAL RESEARCH													
Project L													
Project M													
Total													
Total R&D													

CONTROL OVER R&D

R&D is project-oriented, and costs are accumulated by project. Due to the long duration of a project, adequate project control must exist to accumulate all costs from the startup of the project to the finished product. Further, R&D projects cannot be managed by quantity or volume-driven factors. R&D cannot be measured by money that has been or has not been spent. 75% of the money may have already been spent on the project, but that does not mean the project is 75% complete. R&D expenditures should be in conformity with budget limitations. There should be project controls. Control reports are required by commitment and expenditure. In the control phase, there should be a comparison between the technical and financial aspects of projects. Projects should be continually appraised to determine which ones should be expanded, dropped, modified, or deferred. A significant degree of cost control should be placed over high-risk R&D projects.

R&D RISK

The risk associated with R&D must be analyzed. What has been the track record in R&D of coming up with successful products. If there has been a high failure rate in R&D, proposed projects will have to be examined very closely. Have R&D projects in past years been completed at budget dollar amounts and within expected time periods? What has been the cause for cost overruns and time delays? Do problems still exist or have they been rectified? R&D risk must be appraised by product and market. There is a greater risk when a manager goes from established products and markets to new products and markets. There is more

risk the longer the period between R&D activities until cash flows are obtained from the project.

COORDINATION

A research project may involve coordination between several departments and their managers. The managers must provide input and assistance to each other to succeed. They must know how to interact, what rules to follow, and how the research will benefit their particular responsibility areas and products.

CONCLUSION

Research is defined as the testing in search for a product while development means translating that research into a design for the new product. R&D may be classified as follows: new products, enhancements to current products, projects requested by salespeople and marketing, projects requested by the factory, and fundamental projects having no immediate commercial use.

The manager should continually appraise R&D programs. Are R&D costs and time estimates reasonable? If a specific R&D project has excessive costs and delays, the feasibility of that project may be questionable. The manager must decide on where to direct R&D efforts and how much to spend. The best alternative project must be selected and the progress on the project closely monitored.

CHAPTER 14
CASH FLOW FORECASTING AND CASH BUDGETING

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Explain account analysis for estimating collection percentages.
- Prepare a cash budget
- Enumerate the major components of a cash budget
- Prepare a cash variance report
- Give some popular cash budgeting software

A forecast of cash collections and potential writeoffs of accounts receivable is essential in *cash budgeting* and in judging the appropriateness of current credit and discount policies. The critical step in making such a forecast is estimating the cash collection and bad debt percentages to be applied to sales or accounts receivable balances. This chapter discusses a way of estimating cash collection rates (or payment proportions) and illustrates how these rates are used for cash budgeting purposes.

ACCOUNT ANALYSIS

The most straightforward way to estimate collection percentages is to compute the percentages of collections realized from past months. Once the experience has been analyzed, the results can be adjusted for trends and applied to the credit sales portrayed in the sales forecast. An example illustrates the technique.

EXAMPLE 1

Assume that an analysis of collection experience for August sales revealed the following collection data:

Description		% of Total Credit Sales
Collected in	August	2.3
	September	80.2
	October	9.9
	November	5.1
	December	.5
Cash discounts		1.0
Bad debt losses		1.0
	Total	100.0

If next year's sales in August could be expected to fall into the same pattern, then application of the percentages to estimated August credit sales would determine the probable monthly distribution of collections. The same analysis applied to each month of the year would result in a reasonably

reliable basis for collection forecasting. The worksheet (August column) for cash collections might look as follows:

Description			
Month of Sale	% Total	Sales Net	August Collection
April……	.5	$168,000	$ 840
May..…….....	4.2	192,000	8,064
June.....…….....	8.9	311,100	2,768
July.....…….....	82.1	325,600	267,318
August.....…….....	2.3	340,000	7,820
Total Collections.....…….…….....			286,810
Cash Discounts (July)…….	1.0	325,600	(3,250)
Losses.....…….....	1.0	(3,400)	
Total.....…….....			$ 280160

In preparing a conventional cash inflow budget, the financial manager considers the various sources of cash, including cash on account, sale of assets, incurrence of debt, and so on. Cash collections from customers are emphasized, since that is the greatest problem in this type of budget.

EXAMPLE 2
The following data are given for Sunset Stores:

	September Actual	October Actual	November Estimated	December Estimated
Cash sales	$ 7,000	$ 6,000	$ 8,000	$ 6,000
Credit sales	50,000	48,000	62,000	80,000
Total sales	57,000	54,000	70,000	86,000

Past experience indicates net collection normally occurs in the following pattern:

- No collections are made in the month of sale.
- Eighty percent of the sales of any month are collected in the following month.
- Nineteen percent of sales are collected in the second following month.
- One percent of sales are uncollectible.

We can project total cash receipts for November and December as follows:

	November	*December*
Cash receipts:		
Cash sales	$ 8,000	$ 6,000
Cash collections:		
September sales: $50,000 (19%)	9,500	
October sales: $48,000 (80%)	38,400	
$48,000(19%)		9,120
November sales: $62,000(80%)		49,600

Total cash receipts	$55,900	$64,720

THE CASH BUDGET

The budget preparation process normally begins with the sales budget and continues through the preparation of pro forma financial statements. The last schedule prepared before the financial statements is the cash budget. The cash budget is a schedule of estimated cash collections and payments. The various operating budgets and the capital budget are inputs to the cash budgeting process.

The cash budget is prepared for the purpose of cash planning and control. It presents the expected cash inflow and outflow for a designated time period. The cash budget helps management keep cash balances in reasonable relationship to its needs. It aids in avoiding unnecessary idle cash and possible cash shortages.

The cash budget presents the amount and timing of the expected cash inflow and outflow for a designated time period. It is a tool for cash planning and control and should be detailed so that your know how much is needed to run your business. If you can reliably estimate cash flows, you may retain cash balances near a target level with fewer transactions.

The cash budget should be prepared for the shortest time period for which reliable financial information can be obtained. In the case of many small businesses, this may be one week. However, predicting major cash receipts and cash payments for a specific day is also possible.

The cash budget helps management keep cash balances in a reasonable relationship to needs. It aids in avoiding having unnecessary idle cash as well as averting possible cash shortages. If there is idle cash, you may invest the excess funds in short-term securities such as U.S. Treasury bills and commercial paper to earn a return; if the budget reveals a cash shortage, you can borrow money, cut expenditures, or sell assets. The cash budget ensures that you will have sufficient cash funds available to your business at all times.

The cash budget also allows you to review future cash receipts and cash payments to uncover possible *patterns of cash flows*. In this way, you can study your collection and disbursement efforts to ascertain if you are maximizing your net cash flows. In addition, the cash budget reveals when and how much to borrow and when you will be able to pay the money back. For example, if your cash budget indicates that a significant cash outlay will be needed to buy assets (e.g., store equipment), you may have to borrow money and determine a debt repayment schedule. In order to obtain a line of credit, lenders typically require you to submit the cash budget, along with your financial statements.

The cash budget consists typically of four major sections:

1. The *cash receipts* section, which is cash collections from customers and other cash receipts such as royalty income and investment income.

2. The *cash disbursements* section, which comprises all cash payments made by purpose.

3. The *cash surplus* or *deficit* section, which simply shows the difference between the total cash available and the total cash needed including a *minimum cash balance* if required. If there is surplus cash, loans may be repaid or temporary investments made.

4. The *financing* section, which provides a detailed account of the borrowings, repayments , and interest payments expected during the budgeting period.

Cash budgets are often prepared monthly, but there are no strict rules for determining the length of the budget period. As a general rule, it should be long enough to show the effect of your policies in running the small business, yet short enough so that estimates can be made with reasonable accuracy. Exhibit 1 shows the major components of a cash budget.

EXHIBIT 1
MAJOR CASH FLOW COMPONENTS OF A CASH BUDGET

Cash inflows	*Cash outflows*
Operating:	**Operating:**
Cash sales	Payroll
Collections	Inventory purchases
	Insurance
	Payments to suppliers
Nonoperating:	**Nonoperating:**
Royalties	Capital expenditures
Rents	Interest
Investments income	Loan repayments
Sale of marketable securities	Tax payments
Loan proceeds	Purchase of marketable securities

The basis for estimating cash receipts is *sales*, whether from cash sales or collections from customer balances. An incorrect sales estimate will result in erroneous cash estimates. The sales predictions also influences the projected cash outlays for manufacturing costs, since production is tied to sales. The projection of operating expenses may be tied to the suppliers' payment terms.

Exhibit 2 presents a monthly cash budget.

EXHIBIT 2
MONTHLY CASH BUDGET

		December (actual)	November (actual)	October (actual)	January	February	March	April	May	June
Expected Sales		$ 510,000	$ 457,500	$ 375,000	$ 410,000	$ 385,000	$ 580,000	$ 600,000	$ 600,000	$ 625,0
Cash receipts:										
Cash sales	10%				41,000	38,500	58,000	60,000	60,000	62,5
Collection from sales:										
One month ago	75%				382,500	343,125	281,250	307,500	288,750	435,0
Two months ago	15%				68,625	56,250	61,500	57,750	87,000	90,0
Three months ago	8%				30,000	32,800	30,800	46,400	48,000	48,0
Bad debts	2%									
	100%				522,125	470,675	431,550	471,650	483,750	635,5
Other cash receipts					11,000	7,600	18,500	12,000	16,500	8,1
Beginning of month cash					80,000	29,125	4,000	17,350	38,600	17,3
Total available cash					613,125	507,400	454,050	501,000	538,850	660,9
Cash disbursements:										
Material					138,000	145,000	150,000	125,000	140,000	150,0
Labor and wages					182,000	110,000	169,000	105,000	150,000	172,0
Selling costs					175,000	169,000	181,000	168,500	177,000	165,0
General and administrative costs					46,000	49,500	48,000	47,000	47,000	43,0
Income taxes						28,500			28,500	
Capital equipment					28,000	5,200	21,200		13,000	4,8
Interest expense					15,000	16,200	17,500	16,900	16,000	14,3
Total cash disbursements					584,000	523,400	586,700	462,400	571,500	549,1
Ending cash balance (deficiency) before additional borrowings/ (repayments) or (investments) redemptions					29,125	(16,000)	(132,650)	38,600	(32,650)	111,8
Bank borrowings/(repayments)						20,000	150,000	-	50,000	(100,0
(Investments)/redemptions										
Ending cash balance					$ 29,125	$ 4,000	$ 17,350	$ 38,600	$ 17,350	$ 11,8

CASH VARIANCE ANALYSIS

Comparing estimated and actual cash figures allows you to investigate the reasons for any significant discrepancies and to take any needed corrective action. *Variance analysis* allows you to get a better picture of your cash position and provides insight in improving cash estimates in the next budgeting period. It also aids in the periodic revision of projections. This updating typically occurs at the beginning of each budget segment (e.g., the first day of a quarter, assuming you prepare a quarterly budgeting period, or the first day of a month, assuming a monthly budgeting period). Budgets should be adjusted immediately for significant changes.

Exhibit 3 presents an analysis of cash budget variances.

EXHIBIT 3
CASH BUDGET VARIANCE ANALYSIS

	Previous week		Year-to-Date	
	Budget	Actual	Budget	Actual
Cash receipts				
Collection from customers	$111,000	$109,000	$990,000	$979,000
Investment income	$2,400	$2,500	$33,000	$32,500
Royalty	$3,000	$3,000	$60,000	$60,000
Total cash receipts	$116,400	$114,500	$1,083,000	$1,071,500
Cash disbursements:				
Material purchases	$ 26,300	$ 18,410	$ 176,000	$ 226,000
Payroll	27,500	29,000	400,000	412,800
Property taxes	5,500	5,540	5,500	5,500
Group insurance premium	13,000	13,200	39,000	39,600
Bank note-interest	4,320	4,320	15,000	12,960
Lease payment-building	5,475	5,475	16,425	16,425
Dividend payment	1,232	1,232	3,696	3,696
Rent	6,897	6,897	20,691	20,691
Total disbursements	63,924	65,664	500,312	511,672
Net increase (decrease) in cash	$ 47,076	$ 43,336	$ 489,688	$ 467,328

IS CASH FLOW SOFTWARE AVAILABLE?

Computer software allows for day-to-day cash management, determining cash balances, planning and analyzing cash flows, finding cash shortages, investing cash surpluses, accounting for cash transactions, automating accounts receivable and payable, and dial-up banking. Computerization improves availability, accuracy, timeliness, and monitoring of cash information at minimal cost. Daily cash information aids in planning how to use cash balances. It enables the integration of different kinds of related cash information such as collections on customer accounts and cash balances, and the effect of cash payments on cash balances.

Spreadsheet program software such as *Microsoft's Excel*, *Lotus 1-2-3*, and *Quattro Pro* can assist you in developing cash budgets and answering a variety of "what-if" questions. For example, you can see the effect on cash flow from different scenarios (e.g., the purchase and sale of different product lines).

There are computer software packages specially designed for cash management. Three popular ones are briefly described below.

1. Quicken (Intuit, Inc., 800-246-8848, **www.quicken.com**)

This program is a fast, easy to use, inexpensive accounting program that can help a small business manage its cash flow. Bills can be recorded as postdated transactions when they arrive; the program's *Billminder* feature automatically reminds the payer when bills are due. Then, checks can be printed for due bills with a few mouse and/or keystrokes. Similarly, he/she can record invoices and track aged receivables. Together, these features help maximize cash on hand.

2. Up Your Cash Flow (Granville Publications Software, 10960 Wilshire Blvd., Suite 826, Los Angeles, CA 90024, (800) 873-7789)

This program contains automatically prepared spreadsheets for profit/loss forecasts, cash flow budgets, projected balance sheet, payroll analysis, term loan amortization schedule, sales/cost of sales by product, ratio analysis, and graphs. It is a menu-driven system and can be customized to forecasting needs.

3. Cash Flow Analysis (Superior Software, 16055 Ventura Blvd., Suite 725, Encino, CA 91436, (800) 421-3264)

This software provides projections of cash inflow and cash outflow. Data are input into eight categories: sales, cost of sales, general and administrative expenses, long-term debt, other cash receipts, inventory build-up/reduction, capital expenditures (acquisition of long-term assets such as store furniture), and income tax. The program allows changes in assumptions and scenarios and provides a complete array of reports.

Telecommunications software may be used to link up your personal computer via modem and telephone lines to the bank so as to execute cash payments, transfers between accounts, and obtain current cash balance information. Software available from banks aid in managing cash collections, payments, investment, and borrowing. An example is Chase Manhattan Bank's InfoCash software package which includes modules for:

.*Cash Reporter* - provides account information up to the close of the previous day. Information available includes checks cleared and money transfers.

.*Current Day Reporter* - provides information on current day transactions.

.*Regional Bank Reporter* - provides information on checking accounts held at other banks.

.*Money Transfer Input* - enables the transfer of funds between accounts.

CHAPTER 15
USE OF A SPREADSHEET PROGRAM AND SOFTWARE FOR BUDGETING

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Show how to use spreadsheet software to develop a budget
- Give some examples of stand-alone budgeting software
- Describe some advantages of using budgeting software
- Briefly explain the IFPS/PLUS system

Budgeting and profit planning can be done using a microcomputer with a powerful spreadsheet program such as Excel. Or it can be done using a specific financial modeling language such as Comshare's Planning. These software packages allow you to perform “what-if” (sensitivity) analysis when preparing master budgets, recognizing uncertainty surrounding projections.

USING SPREADSHEET PROGRAMS

In this section we discuss how we can use spreadsheet programs such as Excel. Three examples of projecting an income statement are presented.

EXAMPLE 1

Given:

Sales for 1st month = $60,000
Cost of sales = 42% of sales, all variable
Operating expenses = $10,000 fixed plus 5% of sales
Taxes = 30% of net income
Sales increase by 5% each month

(a) Based on this information, Exhibit 1 presents a spreadsheet for the contribution income statement for the next 12 months and in total.

(b) Exhibit 2 shows the same in (1) assuming that sales increase by 10% and operating expenses= $10,000 plus 10% of sales. This is an example of "what-if" scenarios.

Exhibit 1
PROJECTED INCOME STATEMENT

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*TOTAL*	*PERCENT*
Sales	$60,000	$63,000	$66,150	$69,458	$72,930	$76,577	$80,406	$84,426	$88,647	$93,080	$97,734	$102,620	$955,028	100%
Less: VC														
Cost of sales	$25,200	$26,460	$27,783	$29,172	$30,631	$32,162	$33,770	$35,459	$37,232	$39,093	$41,048	$43,101	$401,112	42%
Operating ex.	$3,000	$3,150	$3,308	$3,473	$3,647	$3,829	$4,020	$4,221	$4,432	$4,654	$4,887	$5,131	$47,751	5%
CM	$31,800	$33,390	$35,060	$36,812	$38,653	$40,586	$42,615	$44,746	$46,983	$49,332	$51,799	$54,389	$506,165	53%
Less: FC														
Op. expenses	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$120,000	13%
Net income	$21,800	$23,390	$25,060	$26,812	$28,653	$30,586	$32,615	$34,746	$36,983	$39,332	$41,799	$44,389	$386,165	40%
Less: Tax	$6,540	$7,017	$7,518	$8,044	$8,596	$9,176	$9,785	$10,424	$11,095	$11,800	$12,540	$13,317	$115,849	12%
NI after tax	$15,260	$16,373	$17,542	$18,769	$20,057	$21,410	$22,831	$24,322	$25,888	$27,533	$29,259	$31,072	$270,315	28%

Exhibit 2
PROJECTING INCOME STATEMENT

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*TOTAL*	*PERCENT*
Sales	$60,000	$66,000	$72,600	$79,860	$87,846	$96,631	$106,294	$116,923	$128,615	$141,477	$155,625	$171,187	$1,283,057	134%
Less: VC														
Cost of sales	$25,200	$27,720	$30,492	$33,541	$36,895	$40,585	$44,643	$49,108	$54,018	$59,420	$65,362	$71,899	$538,884	56%
Operating ex.	$6,000	$6,600	$7,260	$7,986	$8,785	$9,663	$10,629	$11,692	$12,862	$14,148	$15,562	$17,119	$64,153	7%
CM	$28,800	$31,680	$34,848	$38,333	$42,166	$46,383	$51,021	$56,123	$61,735	$67,909	$74,700	$82,170	$615,867	64%
Less: FC														
Op. expenses	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$120,000	13%
Net income	$18,800	$21,680	$24,848	$28,333	$32,166	$36,383	$41,021	$46,123	$51,735	$57,909	$64,700	$72,170	$495,867	52%
Less: Tax	$5,640	$6,504	$7,454	$8,500	$9,650	$10,915	$12,306	$13,837	$15,521	$17,373	$19,410	$21,651	$148,760	16%
NI after tax	$13,160	$15,176	$17,394	$19,833	$22,516	$25,468	$28,715	$32,286	$36,215	$40,536	$45,290	$50,519	$347,107	36%

EXAMPLE 2

Delta Gamma Company wishes to prepare a three-year projection of net income using the following information:

1. 2004 base year amounts are as follows:

Sales revenues	$4,500,000
Cost of sales	2,900,000
Selling and administrative expenses	800,000
Net income before taxes	800,000

2. Use the following assumptions:

- Sales revenues increase by 6% in 2005, 7% in 2006, and 8% in 2007.
- Cost of sales increase by 5% each year.
- Selling and administrative expenses increase only 1% in 2005 and will remain at the 2005 level thereafter.
- The income tax rate = 46%

Exhibit 3 presents a spreadsheet for the income statement for the next three years.

EXHIBIT 3
DELTA GAMMA COMPANY
THREE-YEAR INCOME PROJECTIONS (2005-2007)

	2004	*2005*	*2006*	*2007*
Sales	$4,500,000	$4,770,000	$5,103,900	$5,512,212
Cost of sales	$2,900,000	$3,045,000	$3,197,250	$3,357,113
Gross margin	$1,600,000	$1,725,000	$1,906,650	$2,155,100
Selling & adm. exp.	$800,000	$808,000	$808,000	$808,000
Earnings before tax	$800,000	$917,000	$1,098,650	$1,347,100
Tax	$368,000	$421,820	$505,379	$619,666
Earnings after tax	$432,000	$495,180	$593,271	$727,434

BUDGETING SOFTWARE

There are much user-oriented software specifically designed for corporate planners, treasurers, budget preparers, managerial accountants, CFOs and business analysts. These languages do not require any knowledge of programming languages (such as BASIC and COBOL) on the part of the user; they are all English-like languages. Several popular ones are described briefly.

Adaytum Planning

Adaytum Planning by Adaytum Software (**www.adaytum.com**) (1-800-262-4445) is a multi-user budgeting, planning, and forecasting system. It gives you the flexibility to:

- Update hierarchies directly from General Ledger (G/L).

- Combine top-down planning with bottom-up budgeting
- Make last minute changes to model structure
- Empower end-users to do ad hoc modeling without information system (IS) support.

Comshare's Interactive Financial Planning System (IFPS/Plus) and BudgetPLUS
Comshare's IFPS/Plus is a multipurpose, interactive financial modeling which supports and facilitates the building, solving, and asking of "what-if" questions of financial models. It is a powerful modeling and analysis tool designed to handle large complicated problems with lots of data. It is unsurpassed for large corporate-wide applications - especially those that get their data directly from the enterprise relational database. Originally marketed by Execucom in the 1970's, IFPS is currently used by more than 600 businesses. The data and models created through IFPS/PLUS can be shared throughout the organization because the model logic is self documenting. The capabilities of the program include the ability to explain, perform spreadsheet type editing, produce reports, and built-in business functions. Some of the capabilities of the system are forecasting, linear regression, and automatic extrapolation. The most current version of IFPF/PLUS is 5.1.1, which introduces Visual IFPS. This is a Microsoft Windows application that acts as the "Client in the client-server application." The application runs on the PC and is connected to the IFPS/PLUS running on the server. In other words, IFPS/PLUS can access and take the data from the organization's main database and send the results directly to the user. The user is not inundated with all of the data, but just presented with the results. This keeps the network from getting bogged down. Thus, the user has the power of the server on a PC and all the benefit of IFPS/PLUS. **Comshare BudgetPLUS** is a Web architectured budgeting software that runs in Web or client/server environments, with a relational or multidimensional database. For more, log on to the Comshare website (**www.comshare.com,** 1-800-922-7979, 3001 S. State St., P.O. Box 1588, Ann Arbor, Michigan 48106).

Encore Plus
This package was developed by Ferox Microsystems. The analytical functions are similar to IFPS, but Encore has more model building capability. For example, it is stronger in its risk analysis than IFPS, and even includes a Monte Carlo Simulator. Since Encore Plus is more powerful at the application development level than, say, IFPS, it requires a higher level of programming ability.

Budget Maestro
Planet's Budget Maestro is probably the best answer to distributed budgeting, strategic planning and financial control. Budget Maestro shortens your budgeting cycle and puts you into control of the process. Its information-driven environment guides you through budgeting, planning, modeling, forecasting, resource management, consolidation, analysis, and reporting. CFOs and budget managers can plan, analyze and manage, in ways never before possible. Look at a user's screen and make changes directly without ever being there. Deliver budget models and deploy reconfigured software updates to many users at once. Plus manage budgetary information, even enterprise wide information systems, with a single consistent interface. Planet's Budget Maestro is designed to put CFOs and financial managers in control of all aspects of managing budgets, creating financial models and building and deploying financial plans. Budget Maestro allows business managers unparalleled flexibility in analyzing cash flow and business performance throughout the enterprise. Budget Maestro significantly shortens your budgeting and planning

cycles. It eliminates rekeying and formatting of data. It increases your data accuracy and integrity. It allows your time to manage and analyze your business. It is available in both Desktop and Enterprise Edition. Budget Maestro Enterprise Editions enables multiple independent budgets and plans to be consolidated into a unified enterprise model. The Desktop Edition can be upgraded to the Enterprise Edition at any time.

Microsoft Business Solutions for Analytics—Forecaster
This is Web-based budgeting and planning solution from FRx Software **(www.frxsoftware.com/).** Many organizations find it difficult to perform the ongoing budgeting and planning processes necessary to keep business performance on target. Financial "surprises" are met with panic, and more often than not, companies are forced to make sacrifices in places they cannot afford. The result is a direct, negative impact on their strategic objectives. But it's not for lack of trying… finance departments simply don't have the time it takes to combine multiple spreadsheets submitted from across the company (Let alone the resources to make sure all line managers understand the importance of the budgeting and planning process, and of submitting well-planned information on time!). *Forecaster* puts the systems and processes in place to help you immediately realize the benefits of an effective budgeting and planning process, and make it an ongoing part of your business strategy.

THE LATEST GENERATION OF BUDGETING AND PLANNING (B&P) SOFTWARE

The new budgeting and planning (B&P) software represents a giant step forward for accountants. Finance managers can use these robust, Web-enabled programs to scan a wide range of data, radically speed up the planning process, and identify managers who have failed to submit budgets. More often known as *active financial planning software*, these software includes applications and the new level of functionality that combine budgeting, forecasting analytics, business intelligence, and collaboration. Exhibit 4 lists popular B&P software.

EXHIBIT 4
ACTIVE FINANCIAL PLANNING SOFTWARE—
NEXT GENERATION BUDGETING AND PLANNING (B & P) SOFTWARE

Companies	*Websites*	*Software*

ABC Technologies	www.abctech.com	**Oros**
ActiveStrategy	www.activestrategy.com	**ActiveStrategy Enterprise**
Actuate	www.actuate.com	**e.Reporting Suite**
Adaytum Software	www.adaytum.com	**e.Planning**
Applix	www.applix.com	**iPlanning, iTM1**
Brio Technology	www.brio.com	**Brio.ONE, Brio.Impact, Brio.Inform**
Business Objects	www.businessobjects.com	**e-BI, BusinessObjects Auditor, BusinessObjects BW Connect, WebIntelligence**
Cartesis	www.cartesis.com	**Cartesis Budget Planning, Cartesis Carat, Cartesis Magnitude**
Closedloop Solutions	www.closedloopsolutions.com	**CBizPlan Manager, SpendCapManager, TopLine Manager**
Cognos	www.cognos.com	**Cognos Finance, Cognos Visualizer, Cognos Enterprise, Business Intelligence**
Comshare	www.comshare.com	**Management Planning and Control (MPC) Application, Comshare Decision**
CorVu	www.corvu.com	**CorManage, CorVu Rapid Scorecard, CorBusiness, CorPortfolio**
E.Intelligence	www.eintelligence-inc.com	**e.Intelligence Suite**
Epicor	www.epicor.com	**Epicor eIntelligence Suite**
Geac	www.geac.com	**Geac Smartstream Financials, Enterprise Solutions Expert Series, FRx**
Great Plains Software	www.greatplains.com	**eEnterprise, FRx Budget Controller, Dynamics**
Hyperion	www.hyperion.com	**Hyperion Financial Management, Hyperion Planning, Hyperion Essbase**
J.D. Edwards	www.jdedwards.com	**J.D. Edwards Financial Planning and Budgeting, Business Intelligence, OneWorld Xe**
Lawson Software	www.lawson.com	**Enterprise Budgeting SEA Applications – including E-Scorecard; Analytic Extensions**
Longview Solutions	www.longview.com	**Khalix**
MIS-AG	www.misag.com	**MIS Alea Decisionware, MIS DelaMiner, Collaborative Analytic Processing**
NextStrat	www.nextstrat.com	**NextStrat Strategic Implementation Portal (NextSIP)**
Oracle	www.oracle.com	**Oracle Strategic Enterprise Management (SEM)**
OutlookSoft	www.outlooksoft.com	**OutlookSoft Financial Planning and Analysis (FPA), OutlookSoft Enterprise Analytic Portal**
PeopleSoft	www.peoplesoft.com	**Enterprise Performance Management (EPM), PeopleSoft Balanced Scorecard, PeopleSoft Enterprise Warehouse, PeopleSoft eBusiness Analytics, PeopleSoft Activity-Based Management**
SAP	www.sap.com	**SAP Strategic Enterprise Management (SEM), SAP Financial Analyzer Business Intelligence with mySAP.com**
SAS Institute	www.sas.com	**SAS Total Financial Management, Strategic Vision, SAS/Warehouse Administrator, SAS Enabling Technology (OLAP)**
Silvon	www.silvon.com	**Stratum**
SRC Software	www.srcsoftware.com	**Budget Advisor, Payroll Planner, Information Advisor**

CONCLUSION

As was discussed, there are a number of software packages for budgeting. Companies just entering the budget modeling arena must keep in mind that the differences that exist between the software packages available in the market can be substantial. A comparison should be made by examining the software in light of the planning system, the information system, and the modeling activities. The companies also consider making effective use of in-house computer hardware, micro, mini, or mainframe, and data bases. An effective budgeting system does not necessarily imply an outside time-sharing system or an external economic data base.

CHAPTER 16
BUDGETING FOR CAPITAL EXPENDITURES

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Give some examples of capital expenditures.
- Describe why capital expenditures decisions are necessary.
- Discuss what information is needed to make a capital budgeting decision.
- List factors to consider in determining capital expenditures.
- Identify the four steps in the capital expenditure budgetary process.
- List some major forms for capital project decisions and explain each.
- Prepare a capital budget.

Capital expenditures should be consistent with the long-term plan of the company. They may be for earnings generation by providing additional revenue or reducing costs (e.g., more efficient equipment and machinery is bought, less maintenance expenditures). They should generate an adequate return (a desired ROI should be set). Capital expenditures include replacing machinery to economize on costs, expanding production to increase volume, marketing of a new product, improving the quality of products or services, and manufacturing under proposed contracts. Capital expenditures should take into account current and needed facilities. Commitments must also be considered.

The capital expenditure budget reveals how much is required to invest in capital assets to meet the manager's objectives so that his or her division or department can properly function. The budget breaks down the capital assets by major category, how much funding is needed, when that funding is required, the location of the assets, and pertinent reasons and comments.

The timing, nature, and adequacy of the capital expenditures impacts the long-term viability of the division, department, or other responsibility center that the manager is responsible over.

Capital expenditures may be incurred for one or more of the following reasons: growth, increased sales, increased production, changes in production methods, change in style, cost reduction, efficiency and effectiveness, productivity, improvement in product quality, new business, normal replacement, preventive maintenance, and to counteract competition.

The capital expenditure budget depends on many factors including future potential, return on investment, sales, profitability, productivity and efficiency, capacity utilization, payback period (how many years it takes to get the initial investment back), timing of needed capital expenditures, risk, technological obsolescence, diversification, safety concerns,

financial position including cash flow, tax benefit and other government incentives, market share, new product development, maintenance and repair requirements, problem areas, replacement options, nature of industry, economic conditions, political factors, and laws and regulations (e.g., pollution requirements, restrictive uses on assets).

There are uncertain benefits for capital expenditures because of the long time period involved. In fact, if for some reason a capital expenditure fails, a significant loss is likely.

The manager should prepare the capital expenditure budget needed for his or her division or department after consulting with engineering and technical staff. A capital asset cannot be bought unless it has been included in the capital budget. The capital expenditure budget is a long-term one covering numerous years (e.g., l-30 years).

Capital assets include equipment, furniture, machinery, storage facilities, distribution facilities, and computers. There is typically a significant cash outlay required and high risk involved. The success of the division or department may depend in part on making the best capital investments, the decision to replace existing capital assets, and the decision to sell or abandon existing assets.

The manager should only approve capital expenditures after detailed study and justification. After that, continual monitoring and control are recommended. He or she should set up a priority listing of capital projects based on earnings or strategic importance. The planning should take into account the peculiar characteristics and nature of the industry and company. Capital assets must be properly used, controlled, and insured. Capital expenditures must be within approved limits and must be appropriately accounted for. Capital expenditure
requests must be supported by reliable and accurate documentation and cost estimates.

Duplication in capital expenditures should be avoided because it results in inefficiency and excessive costs. Control is in the form of comparing budgeted expenditures to actual expenditures. The trend in the ratio of insurance expense to the carrying value of the capital assets, and the insured value relative to replacement cost, will indicate the adequacy of insurance protection.

The timing of capital expenditures depends on available alternatives, start-up time, and funds. The manager must identify capital expenditures that are not essential, can be delayed for a reasonable time, and urgently needed. Some capital expenditures result in profit reductions such
as capital outlays required by law, improving R&D, and enhancing employee morale. Some capital expenditures are required by government, such as for employee safety and to conform to building codes.

Factors to Consider in Determining Capital Expenditures:

- Rate of return
- Budget ceiling

- Probability of success
- Competition
- Tax rate
- Dollar amounts
- Time value of money
- Risk
- Liquidity
- Long-term business strategy
- Forecasting errors.

This chapter discusses the budget process, authorization of capital budgets, capital budget forms and reports (including special reports), budget revisions, analysis and evaluation of capital expenditures, and controls.

THE BUDGET PROCESS

In terms of the budgeting process, capital expenditures may be classified as either normal or special. Normal capital expenditures are routine, less costly, and made to maintain current operations. Each project typically does not involve a large cash outlay. The capital expenditure should meet the needs of the manager's division or department. An example is a minor replacement of machinery.

Special capital expenditures are unusual, costly, and made for a specific purpose such as the purchase of a new machine to manufacture a product for a special job ordered by a customer of a one time nature.

Major capital projects are typically planned and proposed by operating managers, and must be approved by upper management. The manager must therefore be thoroughly familiar with the budgeting process for capital expenditures. He or she must properly budget and package the capital expenditure. Capital expenditures must be classified by category, class, need, consequence, and feasibility. Capital expenditures may be required or optional. In the case of minor capital expenditures, the division and department managers may have the authority to approve them on their own.

The four steps in the capital expenditure budgetary process are: approving the project, approving the estimate, authorizing the project, and follow-up. The capital expenditure proposal should contain a description, starting date, completion date, source information, and advantages and disadvantages of the proposal.

Some capital expenditures are minor and not subject to detailed planning. Examples are low-cost machinery and minor renovations. These minor expenditures may be lumped together with a blanket appropriation. Capital expenditure policy should take into account the following:

- Desired rate of return
- Cost impact

- Age of existing assets
- Expected capacity of the item
- Asset life
- Growth potential
- Employee availability
- Competition
- Stage of the business cycle
- Legal liability exposure
- Regulatory requirements

The manager should set a priority ranking for capital expenditures in terms of operating necessities and nonnecessities. The following dates should be noted:

- Dates manpower will be available
- Marketing schedules for products to be produced
- Delivery dates when items are needed

A current capital budget usually covers 3-5 years in annual segments of planned capital expenditures.

AUTHORIZATION OF CAPITAL BUDGET

Capital expenditures should be kept within authorized limits. If amounts are needed above those limits, special approval by top management is required. A project not meeting expectations or that is no longer appropriate given current circumstances may be cancelled. It is better to cancel a project if the cost/benefit relationship indicates that the project is no longer viable. If a project is a succession of individual projects, a partial authorization may be made.

Exhibit 1 shows a typical project application form, while Exhibit 2 presents an advice of project change. In Exhibit 3 an appropriation request is presented.

EXHIBIT 1
PROJECT APPLICATION

Department Name			**Application No.**		
Department Code _____			**Offensive** ☐		
Function Code _____			**Defensive** ☐		
Description Objectives					
Expenditure Amounts					
Fiscal Year	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Total**
2002					
2003					
2004					
2005					
2006					
Total					
Date	**Submitted by**				
Comments					
_____ **For the Division**					

Purpose: To show description objectives and dollar amounts scheduled by quarters.
Distribution: Project analyst, executive vice president for operations, treasurer, controller, CFO, CEO.
Use: To schedule longer-term capital expenditures.
Action To Be Taken: Make sure scheduled capital expenditures are within the company's overall capital budget.

EXHIBIT 2
ADVICE OF PROJECT CHANGE

Department Name		**Date**	
Department Code		**Appropriation Request No.**	
Project Title			
Expenditure Amounts			
	Original Authorized	**Latest Estimate**	**Increase (Decrease)**
Capital			
Expense			
Total			

Amount spent to date $ _____ amount committed to date $_____

WHAT IS THIS NEW AMOUNT BEING REQUESTED?

_____ _____
Project Sponsor **Department Area Supervisor**

Project to be continued ☐
☐
Revised request required

See comment on reverse side ☐ **Final Approver** _____
Date _____

Purpose: To show project change description, reason for change request, and dollar amounts involved.
Distribution: Project analyst, executive vice president for operations, treasurer, controller, CFO, CEO.
Use: To determine all of the reasons and justifications for making a project change.
Action To Be Taken: Determine if the project change under review is justified on a cost-benefit basis.

EXHIBIT 3
APPROPRIATION REQUEST

Original Department Name	**Department Code**	**Appropriation No.**
Budget Capitalized ☐ **Expensed** ☐	**Project Applic. No.**	
Accounting Code	**Project Appl. Total Exp. $**	**Appropriation Total $**
Description		
Purpose		
Current Facilities		
Proposed Facilities		
Cost Justification (Savings/Benefits)		

PROPOSED EXPENDITURES		**APPROVALS**		**DATE**
Equipment Cost		**Originator**		
Material Cost				
Installation Costs:				
External Services		**Dept/Area Suprv.**		
Internal Services		**V. President**		
Miscellaneous Costs		**Controller**		
Freight		**Division Head**		
Taxes		**CEO**		
Total		**Bd. of Dir.**		

Purpose: To show description, purpose, cost justification, and proposed expenditures of a project.
Distribution: Project analyst, executive vice president for operations, treasurer, controller, CFO, CEO.
Use: To justify costs for an appropriation request.
Action To Be Taken: Make sure proposed capital expenditures are justified and are also within the company's overall capital budget.

An authorization form should be filled out for approved capital expenditures. The reason and purpose of the expenditure should be given. Exhibit 4 is an illustrative authorization form.

EXHIBIT 4
CAPITAL EXPENDITURE AUTHORIZATION

Division:
Plant:
Date:

The capital expenditure is needed because of: (Check appropriate item)

___ New product
___ Normal replacement
___ Modification in production process
___ Cost reduction
___ Increased sales volume
___ New quality control standards
___ Style change

Description and justification

Estimated Cost

Material
Labor
Overhead
Contingency
Total Cost

Expected Return on Investment

Payback Period
Life
Construction Period
Disposal Value

Manager's Comments and Recommendations:

Requested by:
Approved by:

The amount authorized should be periodically compared to actual costs incurred. In addition, commitments must be recorded and monitored because the total appropriated amount may ultimately be exceeded. The estimated cost to complete should also be noted along with any expected overruns or underruns.

CAPITAL BUDGET FORMS

Request forms should be completed and approved for capital expenditures. A commitment record contains the purchase orders issued. There is an appropriation form for capital expenditures.

The form provides information on the benefits to be obtained from the proposed project, and the expected cost savings. The authorization sets forth the type and scope of the project.

An appropriation request form is filled out by the manager of the responsibility unit in detail providing justification to support the capital proposal. The manager must thoroughly appraise the proposed capital project.

A proposal form for capital expenditures may include the following information: title of project, project objectives, description of project, proposed budget, analysis and evaluation, supporting documentation and calculations, justification, and time estimates.

Exhibit 5 presents a typical initial investment report form.

EXHIBIT 5
INITIAL INVESTMENT REPORT

Cost of new equipment (per invoice)		$345,600	
Add:	Freight	3,150	
	Installation costs	1,750	
	Other	1,250	
	Total cost	351,750	(a)
Less:	Trade-in allowance	27,600	
	Salvage recovery net of income taxes	4,320	
	Costs avoided on old equipment, net of income taxes:		
	Savings in wages	6,700	
	Repairs	2,100	
	Maintenance	1,500	
	Other	3,100	
		45,320	(b)
Add:	Additional working capital needed		
	Cash	7,500	
	Receivables	15,800	
	Inventory	20,000	
		23,300	(c)
Net investment for capital budgeting decision (a)-(b)+(c)		$329,730	

A capital budget form summarizes proposed capital projects for the period by responsibility center. Exhibit 6 presents an illustrative capital budget form.

EXHIBIT 6
CAPITAL BUDGET FORM

Department	Item	Description	Item Number	Status	Total Expenditure	Expected Rate of Return	Priority	Classification

CAPITAL BUDGET

The capital asset budget includes beginning balance, additions, deletions, depreciation, construction in progress, and ending balance. The budget format should include category, class, project title, project number, project life, capital costs, and return on investment. The budget should contain provision for explanatory comments.

Extraordinary repairs are usually included in the capital expenditure budget but ordinary repairs are included in the expense budget.

The production budget may require capital additions.

Exhibits 7 and 8 illustrative capital budgets.

EXHIBIT 7
QUARTERLY CAPITAL EXPENDITURE BUDGET

				Current Year's Budget					
Location	Project Description	Return on Investment	Total Appropriation	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Expended in Prior Years
Detroit Plant	Replacement								
	Coolant press	5.40%	$ 6,785			$ 6,785		$ 6,785	
	Expansion								
	Thickness guage	6.80%	19,870				$ 19,870	19,870	
Chicago Plant	Expansion								
	Thickness gauge	6.70%	7,890		$ 7,890			7,890	
	20" shears	11.20%	2,100		300	1,800		2,100	
	Replacement								
	Hydraulic press	15.0%	34,700	$ 14,300		15,400		29,700	$ 5,000
	Coolant system	11.0%	2,375			2,375		2,375	
	Tool block	8.0%	1,235				1,235	1,235	
			$ 48,300	$ 14,300	$ 8,190	$ 19,575	$ 1,235	$ 43,300	$ 5,000

EXHIBIT 8
CAPITAL EXPENDITURE BUDGET

Item	To Maintain Current Operations	To Expand	Total
A	$300,000	$200,000	$500,000
C	100,000	50,000	150,000
Equipment	150,000	100,000	250,000
Total	$550,000	$350,000	$900,000

CAPITAL EXPENDITURE REPORTS

The capital expenditure report should contain information of the authorized amount, actual costs, committed funds, unencumbered balance, estimated cost to complete, and cost overrun (underrun).

Exhibits 9 and 10 present typical reports showing the comparison of budgeted expenditures to actual expenditures.

EXHIBIT 9
COMPARISONS OF BUDGET TO ACTUAL CAPITAL EXPENDITURES

	Expenditures					
	Month			*Year-to-date*		
Property Description	***Actual***	***Budget***	***Variance +(-)***	***Actual***	***Budget***	***Variance +(-)***
Buildings	$ 76,800	$ 80,000	$ 3,200	$ 876,500	$ 850,000	
Building Improvements		10,000	10,000	21,890	25,500	3,610
Leasehold Improvements	9,760	13,200	3,440	22,340	23,400	1,060
Tooling	6,660	5,800	(860)	6,789	16,000	9,211
Equipment	24,350	27,500	3,150	145,679	156,000	10,321
Furniture & Fixtures	4,567	3,450	(1,117)	6,730	5,800	(930)
Automobiles	12,300		(12,300)	15,600	19,000	3,400
Total	$ 134,437	$ 139,950	$ 5,513	$1,095,528	$1,095,700	$ 26,672

EXHIBIT 10
CAPITAL EXPENDITURES PERFORMANCE REPORT
ESTIMATED VS. ACTUAL

Department Name:
Department Number:
Authorization Number:
Description:
Today's Date:
Date Activity Began:

Item	Authorized Amount	Cumulative Actual Amount	Variance	Percent	Reason
A	$100,000	$103,000	$3,000	3%	Delay because of strike
B	80,000	81,000	1,000	1.25	Higher prices for component parts

etc.

Exhibit 11 presents a capital expenditure status report. This report should be periodically prepared by the manager to keep track of a project so that analysis and control may be facilitated.

A progress report should be prepared to determine if all is going as planned and what corrective action is needed, if any. A detailed evaluation of capital expenditures may not be possible when a sudden, unexpected, or important development occurs. An example is a machine breakdown resulting in a production delay on the assembly line.

A capital expenditures progress report monitors each project's progress and indicates any overruns or underruns. Exhibit 12 presents a progress report.

EXHIBIT 11
CAPITAL EXPENDITURES STATUS REPORT

Project	*Date Authorized*	*Amount Authorized*	*Spent or Committed*	*Balance*	
Conveying system	4/45/2001	$ 76,300	$ 67,000	$ 9,300	(b)
Line No. 4	8/1/2001	154,000	125,000	29,000	(a)
Line No. 7	8/1/2001	68,790	45,000	23,790	(a)
Line No. 9	9/1/2001	67,000	78,000	(11,000)	(a)
Modulators	8/10/2001	4,500	5,100	(600)	
Winder No. 5	8/1/2001	14,570	5,600	(20,170)	(a)
Winder No. 3	10/12/2001	7,890	4,300	3,590	(a)
Rail siding installation	3/7/2001	56,000	47,000	9,000	(a)
Cement slabs	6/15/2001	45,000	45,000	-	
Silos	6/15/2001	17,890	17,890	-	

Note: (a) On plant at this stage; (b) Additional work authorized

EXHIBIT 12
CAPITAL EXPENDITURES PROGRESS REPORT

Item Number	Description	Amount Approved	Expected Completion Date	Cumulative Expenditures to Date	Amount Needed for Completion	Total Actual Expenditures	Budgeted Expenditures	Variance	Comments

BUDGET REVISIONS

Capital budgets should be revised when errors are found or circumstances change. Revisions would be required for changes in cost estimates, unexpected developments in the economy, design changes, technological developments, action by competitors, change in divisional or departmental objectives, and casualty losses.

SPECIAL PROJECTS

Special capital expenditures involve nonroutine, large cash outlays for major specific projects. An example is the purchase of new machinery to meet customer demand. Optional projects include equipment replacement, capital expansion, modified techniques, and new ventures. Capital expenditures should be consistent with the manager's desired return on investment.

ANALYSIS OF CAPITAL PROJECTS

The manager should compare the expected profit to actual profit for each capital project. Further, an evaluation should be performed of the difference between budgeted and actual capital expenditures along with justification. Some analytical questions to be answered by managers include: Are specialized equipment and machinery required? If capacity is expanded, what impact will it have on warehouse space?

CONTROL OVER CAPITAL EXPENDITURES

The manager should control individual projects from beginning to end. Capital expenditure outlays should be documented by supplier. Contractor price quotations should be reviewed for reasonableness. Competitive comparisons should be made. Contractors may be changed when cost savings arise, quality problems exist, delivery dates are not being met, and so on.

CONCLUSION

The capital expenditure budget lists capital assets to be purchased, sold, or discarded. Capital expenditures may be made to replace obsolete machinery or to expand and improve such as expenditures needed for new product lines. Capital assets must be used efficiently and productively. The manager should carefully evaluate alternative capital proposals. Further, retirement of capital assets without adequate replacement may have negative long-term effects.

CHAPTER 17
ZERO-BASE BUDGETING: PRIORITY BUDGETING FOR BEST RESOURCE ALLOCATION

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Define *zero-base budgeting.*
- Discuss the advantages and disadvantages of ZBB.
- Explain how ZBB differs from traditional budgeting.
- Describe the steps involved in the ZBB process.
- Define *decision packages.*
- Prepare a zero-base budget.

Zero-base budgeting (ZBB) can be used by managers to identify, plan, and control projects and programs. It enhances effectiveness and efficiency. There is a matching of service levels to available resources. Each manager must justify his or her budget request in detail beginning with the zero balance. It can lower production, service, and operating costs.

ZBB is a priority form of budgeting ranking activities such as products and services. It may be used by managers to review and analyze programs, proposals, activities, and functions in order to increase profitability, enhance efficiency, or lower costs. ZBB results in the optimum allocation of company resources. There exists an input-output relationship.

ZBB is useful as part of an overall cost reduction policy. ZBB considers the objectives of the activity and how they are to be accomplished. The failure to fund an activity may result in adverse consequences that have to be taken into account. For example, the failure to produce a particular product may adversely effect the sales of related products in the company's overall product line.

Managers who benefit from using ZBB include production managers, purchase managers, marketing executives, general managers and other administrative staff, engineers, research managers, personnel managers, operations research staff, attorneys, and economists. For example, ZBB can be used by marketing managers to appraise competing alternative product lines, formulate an advertising strategy, evaluate salesperson performance, and establish and monitor marketing priorities. A cost/benefit analysis should be undertaken for each sales program in terms of staff, product, and territory. The objectives of each subunit (e.g., department, responsibility center) should be consistent with the overall goals of the company.

This chapter discusses the ZBB process, its effects, activity units, decision packages, ranking proposals, and project (program) budgets.

THE ZERO-BASE BUDGETING PROCESS

ZBB begins with a zero balance and formulates objectives to be achieved. All activities are analyzed for the current year. The manager may decide to fund an existing project as last year after his or her yearly review. However, it is most likely that funding will be increased or decreased based on new information. It is also possible that an alternative way may be used for that project based on current cost or time considerations.

The ZBB approach sets minimum funding amounts for each major activity (e.g., product, service). Amounts above the minimum level must be fully justified in order to be approved by upper management. Each program, product or service is looked at each year to determine its benefit. If an activity cannot be supported as having value, it is not funded. The manager is not concerned with the past but rather looks at the current and future viability. The manager in effect "cleans house" discarding of the "dead wood." In other words, programs with inefficiencies, waste, and anything that no longer makes financial sense is dropped.

Exhibit 1 presents the key differences between ZBB and traditional (incremental) budgeting systems.

EXHIBIT 1
DIFFERENCES BETWEEN TRADITIONAL AND ZERO BASE BUDGETING

Traditional	Zero Base
Starts from existing base	Starts with base zero
Examines cost/benefit for new activities	Examines cost/benefit for all activities
Starts with dollars	Starts with purposes and and activities
Does not examine new ways of operating as integral part of process	Explicitly examines new approaches
Results in a non-alternative budget	Results in a choice of several budget levels of service and cost

The ZBB process involves the following:

- Developing assumptions
- Ranking proposals
- Appraisal and control
- Preparing the budget
- Identifying and evaluating decision units

ZERO-BASE BUDGETING EFFECTS

The manager must consider the negative effect, if any, of not accepting a proposed project. For example, if the production manager does not buy a certain type of machine, that will cause quality problems with the product.

ACTIVITY UNITS

The manager should have control over the activities in his or her responsibility unit. He or she must be thoroughly familiar with how his or her department functions and what resources are needed in terms of staff and money. Activities should be detailed to show work flow.

The *activity unit* is an important cost element of ZBB. It is the lowest unit within the company for which a budget is prepared. An activity unit may represent a function, program, organizational unit, or line item. A manager is typically accountable for the performance of a unit. Decision units include research and development, quality control, computer services, legal, engineering, production, marketing, and personnel.

There are alternative operating modes for activity units including centralizing the activity, decentralizing the functions, integrating the operations, expanding or reducing activities, and eliminating the function. Productivity and effectiveness measures should be utilized.

The manager should consider financial information, work load, and established standards.

Measures of performance include:

- Production control - number of manufacturing trouble spots and poor productivity.
- Quality control - number of rejections and other deficiencies.
- Regional marketing manager - number of lost accounts and reasons therefore.

Control measures include:

- Quarterly output appraisal using predetermined performance standards.
- Quarterly modifications to the budget based on current information.
- Comparing actual cost and time to budgeted cost and time for variance determination.

Decision units should be compared within the company, particularly those that are comparable in size (e.g., number of workers, total assets, and revenue).

There should be priority given to activities that must conform to legal requirements, industry practice, or other constraints.

DECISION PACKAGES

The first major step in ZBB is the development of decision packages for existing and new programs. The decision package contains a description of the project, specific measures, and employee responsibilities. The decision package includes the manager's recommended way of producing a product or rendering a service in terms of cost and time. Alternative ways of performing the activity are also specified. For example, improving the quality will increase the cost. Further, reducing the time may also increase the cost because of overtime pay.

A decision package contains the following information:

- Description of the activity and reasons to carry it out.
- Statement of objectives and benefits to be derived.
- The plan to achieve the program.
- The priorities established.
- Cost and time estimates along with evaluation.
- Alternative methods of achieving the activity stated in cost and time.
- Measures of output.
- Resources needed including physical and personnel support from other responsibility centers.
- Legal, technical, and operational aspects.
- Risk considerations.

Decision packages must be carefully reviewed for possible deficiencies. The manager should assure himself or herself that the packages are complete and independent. Further, decision packages should not cross functional and organizational lines. If information is missing or packages are lumped together, misleading conclusion may be drawn.

A decision package can be either mutually exclusive or incremental. The former are alternative options meaning that the acceptance of one precludes the acceptance of another. Incremental packages involve additional effort levels. For example, one package may necessitate 3,000 labor hours per month while another may require 3,500 hours for that month.

Decision packages may cover either a short-term or long-term period. Will there be quick and tangible results? A matching of resources with objectives is necessary. Emphasis should be placed on higher return areas.

The format of decision packages should be standardized. Upper management has to approve the decision packages formulated by managers.

RANKING PROPOSALS

In ranking proposals, upper management will rely heavily on the recommendations made by managers who have a keen knowledge of their decision units. Quantitative and qualitative factors must be considered. A cost/benefit analysis should be performed for each decision unit.

The ranking of decision packages goes in the order of decreasing benefit. The manager must identify those products or services that are the most crucial. The highest priority should be assigned to the minimum increment of service below which the unit cannot effectively operate.

Top management performs the final ranking after obtaining the initial recommendations of the manager within the company's divisions, departments, and cost centers. If a manager's recommendations are rejected, he or she should be notified of the reasons why.

A dollar cutoff must be established for programs depending on budgetary constraints. For example, an 80% cutoff may be set so if the programs total $l,000,000 only $800,000 is in available funds. The manager should also rank nonfunded packages in the event that additional funds become available at a later date. A low priority item may later become a high priority one because of changed circumstances. For example, the political climate may change due to a new legislature, governor, mayor, or president. Priorities may change during the year so adjustments may be necessary.

There are different ranking techniques that may be used such as single standard, voting, and major category. Single standard is best for similar packages. All packages are evaluated based on only one feature such as revenue, earnings, return on investment, net present value, amount saved, and cost/benefit ratio. This approach is not suitable for dissimilar packages because it may not incorporate an essential aspect such as health and safety.

Under the voting method, there is a voting committee. Each member appraises the decision packages. The packages are then discussed at the committee meeting. The ranking is based on a committee vote.

Under the major category approach, decision packages are classified into areas. Decision packages are then ranked by categories with more important ones receiving greater emphasis. Budgets will vary depending on the category. For example, a category promising rapid growth may receive ten times the funding of a questionable category of high risk and limited earning potential.

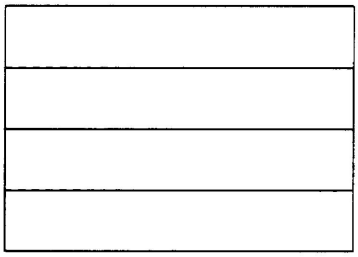
Once fund allocation has been decided upon, detailed budgets are drawn up. These budgets are usually prepared based on incremental activities incorporated on the ranking table.

EXAMPLE 1

A company prepares a decision package for each product department managers wish to produce. There are 150 decision packages for all existing and proposed products. An

illustration for a decision package for product A to be manufactured in Department X is presented in Exhibit 2.

EXHIBIT 2
PRODUCT A – DECISION PACKAGE



Alternative A	$200,000	1 year
Recommended Way	$250,000	6 months
Alternative B	$350,000	2 months

Each of the 150 products from different departments are submitted by managers to senior management who will appraise them. There is a budget constraint so some products will not be funded. The decision package for product A may be flatly rejected. If approved, the manager may be able to produce it either as recommended or in one of the alternative paths. The alternative may be chosen because it involves lower cost or a faster completion date. By specifying alternatives, innovation and better ways may be forthcoming.

An illustrative zero-base budget is presented in Exhibit 3

EXHIBIT 3
CHILDREN'S PLAYHOUSE
SAMPLE ZERO-BASE BUDGET

	Carnival	*Candy Drive*	*Cake and Dessert Auction*	*Recycling Program*	*Yearly Skit Program*	*Total*
Revenues:						
Sales	$8,000.00	$3,500.00	$2,000.00	$1,000.00	$1,000.00	$15,500.00
Expenditures:						
Equipment rental	2,000.00	0.00	0.00	0.00	0.00	2,000.00
Facilities rental	1,000.00	0.00	450.00	0.00	350.00	1,800.00
Security	100.00	0.00	100.00	0.00	100.00	300.00
Total expenses	3,100.00	0.00	550.00	0.00	450.00	4,100.00
Excess Revenue Over Expenditures	$4,900.00	$3,500.00	$1,450.00	$1,000.00	$ 550.00	$11,400.00

PROJECT (PROGRAM) BUDGETS

A program may be by division, department, or segment within the department. A program budget is the estimated cost of conducting an activity or function. Program activities include

products or services, research and development, capital assets and facilities, maintenance, marketing, training, engineering, and government contracts. A program budget provides functions for a specific activity such as quality control and marketing research.

After a goal is identified, the program and steps to achieve that goal are specified. There is an evaluation of alternatives to ascertain the most productive and least costly manner to achieve program objectives. Resources must be allocated to programs and projects.

A project should be segregated into major activities or tasks, which should then be subdivided into specific sub-activities. Program budgeting examines the tasks needed to complete a program, the manpower required, and the time period for each activity.

Program budgeting includes planning, programming, and budgeting. It accumulates data and reviews the detailed plans. It contains a mix of resources including staff, equipment, raw materials, and capital to achieve the desired objective within a reasonable time period. Alternatives are appraised. The program budget is consistent with the long-term plan. There is a downward progression of the decision making process. There is an emphasis on output goals of products and services rather than input goals. Program budgeting is future-oriented examining the effect of current decisions on future results.

Program budgets are used for programs or projects of a one-time, long-term nature involving large cash outlays. Any potential problems should be anticipated. Responsibility should be assigned for particular activities. All costs should be examined for reasonableness. There may be required adjustments to the plan.

A cost/benefit analysis should be undertaken for programs. There should be a ranking of programs in priority order. Program interrelationships must be identified. There should be a tracing of costs to individual projects, products, services, or individuals. This may be accomplished by assigning project numbers and having staff enter code numbers into the computer when supplies are requisitioned, expenses incurred, and salary payments made. Work packages have to be approved by segment managers. An illustrative work-authorization form appears in Exhibit 4.

EXHIBIT 4
WORK-AUTHORIZATION FORM

Project:
Work-package number:
Issue date:
Revision date and number

		Cost	*Center*
Material			
	Hours	*Cost*	*Center*
Labor			

A time sheet is prepared for project activities. Estimated and actual times are compared to see if deadlines are being met. There should be a time schedule for each stage of the project. The time schedule should cover the phases of planning, programming, and budgeting. Activities should be timed and scheduled using the program evaluation and review technique (PERT). Work should be inspected at key points.

CONCLUSION

A cost/benefit analysis must be undertaken to see if the benefits to be derived from ZBB are worth the costs to be incurred. Because of the costs and time required, ZBB should be conducted over a span of years (e.g., 3 years) instead of one year. An annual evaluation is not cost-effective.

ZBB is a continual process because decision packages must be revised for unexpected events.

CHAPTER 18
BUDGETING FOR SERVICE BUSINESSES

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Describe the special features associated with budgeting for service businesses.
- Discuss a common pattern observed while implementing a budgetary system for growing service companies
- Prepare a budget for service businesses such as a hotel and an airliner

A budget is important to meet goals and objectives. Most discussions of the budgetary process tend to focus on manufacturing firms. However, there are more businesses becoming engaged in nonmanufacturing activities today and such businesses can benefit greatly from a properly designed budgetary planning and control system. Budgeting may be used by a service business (which does not have merchandise inventory). For example, an airline may budget the average occupancy rate for seats and passenger miles. A hotel may budget the occupancy rate for rooms and die cost per room. For the most part, the budgeting methods and procedures described for manufacturing companies also apply to service businesses.

There are two reasons why special attention should be devoted to budgetary planning and control techniques in the service industry. First, planning and control are critical functions in all business, whether they produce and sell goods or provide services. Many service businesses have become more competitive in recent years. This increase in competition can be attributed to many things, such as the growth of the economy and the increase in demand for specialized services. When competition increases, planning and control become even more important.

Second, the practice of budgeting is probably not as well developed in service companies as it is in manufacturing firms. In manufacturing industries, budgeting is forced upon the business by the need to keep sales and production coordinated. A manufacturing firm's investment in inventory forces the company to plan.

In service companies, however, the business activity largely requires human effort, and personal services are generally performed after the orders are received. The investment in inventory as we know it in manufacturing does not exist. There is no production activity. As a result, the management of a service company may not see the same need for planning and control.

Because budgeting is a planning and control system, the techniques applied to service companies will be very similar to those applied to manufacturing companies. The service company must not only develop an overall budget or profit plan for the year but also must establish good budgetary control that follows a well thought out plan of organization. The major difference in budgeting nonmanufacturing activities relates to the types of costs incurred and

therefore to the control techniques applied. In most service industries, the major cost element is that of personnel, being reflected in salaries, wages, commissions, bonuses, and fringe benefits. Because of this fact, budgeting techniques are primarily concerned with planning the use of personnel and with controlling personnel effectiveness.

A professional service business sells the employees' expertise. Emphasis is given to labor productivity and controlling overhead costs. Pricing policies are budgeted based upon either a daily rate, hourly rate, fixed rate for the job, or a contingent fee based on, for example, the dollar value of property sold, a court settlement, or sales price.

Problems may occur if there are inadequate numbers of qualified workers or insufficient capital facilities to meet customer demand. It is important that employee time be used productivity. A productivity report should be prepared of sales dollars generated per professional and the associated direct costs. The format of the report is:

Revenue generated
Less: Direct costs
Residual profit
Less: Overhead
Profit

A service business relies heavily on its reputation for fast and quality service. Otherwise, customers will switch to competitors. Rendering poor quality for short-term opportunities has disastrous long-term effects. It is best to grow at a steady, quality rate.

A service company must place a premium on defining the operations required to produce a service profitably and on assigning responsibility for planning and controlling such operations efficiently. For example, whereas receivables and inventories are two current asset areas for planning and control emphasis in a manufacturing company, most service companies regard only receivables as an important current asset. So emphasis on points of cost control and specific balance sheet items may shift between the two types of business concerns. The underlying concept of budgeting, however, does not change.

For growing service companies, a common pattern is observed while implementing a budgetary system:

1. A profit or target for the company is established.
2. An annual plan is developed that indicates expected revenues and expenses by the organizational segments and in total, by month.
3. The cash budget is established.
4. A planned statement of financial position is developed and tested against selected standards.
5. Actual performance is measured against plan by specific levels of management position.
6. Corrective action is taken as deemed necessary.

Service companies typically have prepared budgets for departmental expenses and have tracked these expenses against plan. However, it can be seen that budgetary control should extend to profit centers, where accountability for revenues as well as costs can be placed. Keeping personnel costs well within the limits set for planned revenues is critical in order to achieve net income objectives.

In a professional service firm, such as a CPA firm, law practice, consulting business, or advertising agency, revenue dollars may be specifically identified to specific individuals. The revenue and direct costs per individual may be determined. Indirect costs are budgeted separately and allocated based on revenue. These businesses are labor intensive and have high variable cost structures.

In service companies, investments in inventories, plant and equipment typically are relatively small, but die planning and control techniques should still extend to the statement of financial position so that acceptable financial ratios are maintained. However, it is difficult to control a business with high long-term capital investment, such as transportation companies, computer service business, and leasing companies.

Service businesses should make long-term commitments *only* for salaries and facilities if it is confident of future sales. Otherwise, if future sales fall off, the high fixed costs will hurt profits.

This chapter presents the budgeting aspects of certain service industries to aid the reader's comprehension of the subject. These include airlines, hotels, training centers, and television production.

AIRLINES

Airlines face a problem of perishable services. Airlines have systems known as yield management systems. These systems constantly adjust what fares are available and the number based on sales. For example, if an airline's LA to New York seats are selling very briskly, the system will severely limit or eliminate discounted seats. However, the inverse is also true, if a flight is slow selling, the amount of discounted fares available will increase to stimulate sales. The goal of the yield management system is to maximize revenue, taking into account that if the seat goes unsold, it is a lost revenue opportunity.

HOTELS

The calculation of sales volume and unit price is much more difficult for hotels than manufacturers. Hotels have a maximum capacity of rooms each night and annually, like a factory's production capacity. However, the demand for a hotel's rooms can vary greatly from day to day, month to month, and year to year.

For hotels, it is very difficult to predict sales and average unit selling price. Historical data can be of some help, but it does not take into account many environmental factors, such as the economy, new competitors, aging facilities, bad weather, unstable governments, fluctuating

currencies, and current travel trends.

Reservations forecasting is much more art (and luck) than a science. Modern computer systems have done little to improve accuracy of hotel room sales. One problem is that a hotel room is a perishable commodity. If it is not sold one night, the potential value for that time is lost forever.

Hotels also try to maximize their revenues per room, but an airline system will not work. Airlines deal with one customer occupying one seat on a flight. Hotels however, have customers staying different lengths of time, staying longer than they have reserved, departing early; they also have no-shows. Hotels do not have fare products like airlines, they have market segments. The hotel's goal is to book as many of the next highest paying segments, and so on. The results of this can be a small number of rooms allocated to a low paying market group. A hotel's reservation system does not function like an airline's; the number of each market segment is not automatically adjusted for yield maximization. The rooms allocated to the various market segments must be done manually, for the reasons listed above.

Hotels, like airlines, can refuse potential business. If a hotel is projected to be full or near full, it will stop taking reservations or will stop selling highly discounted rates. If there are cancellations, these rooms now stand the chance of going unsold (not producing revenue). Hotels may also refuse potential discounted reservations because they think they can sell the remaining rooms to full-paying clients, taking a chance that these rooms will not sell at all. For these reasons, hotels as well as airlines overbook. They gamble that they will have a sufficient amount of no-shows and cancellations to accommodate everyone, which is not always the case. A projected sales budget for hotels is presented in Exhibit 1.

EXHIBIT 1
HOTEL PROJECTED SALES BUDGET

	MON	*TUES*	*WED*	*THUR*	*FRI*	*SAT*	*SUN*
Leisure	50	60	60	70	100	100	40
Corporate	75	80	80	50	10	10	60
Government	100	90	90	50	10	10	50
Group	100	70	120	120	40	60	70
Total Rooms	325	300	350	290	160	180	220
(%)	81%	75%	88%	73%	40%	45%	55%
Average (%) for the week: 65% (based on a 400-room hotel)							

To estimate the gross sales, multiply the projected number of rooms in each category by the averaged rate paid by each market segment. A sample rate structure is presented in Exhibit 2.

EXHIBIT 2
SAMPLE HOTEL RATE STRUCTURE

Market Segment	*Rates*	*Avg. Rate Paid*
Leisure	$100–130	$120
Corporate	$ 80–115	$ 95
Government	$ 75–105	$ 90
Group	$ 60– 90	$ 70

Monday's revenues would look like this:

Leisure	(50) ($120) =	$ 6,000
Corporate	(75) ($ 95) =	$ 7,125
Government	(100) ($ 90) =	$ 9,000
Group	(100) ($ 70) =	$ 7,000
		$29,125

Having estimated in the budget that Monday XX, 20XX, you will have projected room revenue of $29,125 on a projected occupancy of 81 percent.

Projected sales are done on a daily, monthly, and annual basis. The sales are very closely monitored because they are selling a perishable commodity. if a room is not sold one night, then its potential for revenue for that time is lost forever, if a slow period is projected from reports and bookings, management will really push to try to sell these rooms. They will often reduce rates (especially on weekends, when business travel is low) to try to stimulate sales. This hopefully will provide at least a minimal amount of revenue. The notion of reducing rates is somewhat tricky when dealing with image. Additionally, hotels that are located in areas of high competition (such as Anaheim, California), use rates as one of their competitive weapons.

From the sales budget you can now develop a projected cash collections schedule. For a hotel, this is not as straightforward as for a manufacturer. When a manufacturer sells its finished goods to a retailer or wholesaler, generally, they have terms such as net 30. It knows from past experience that it will collect X percent one month after the sale, Y percent in the second month, Z percent in the third, while leaving some percentage uncollected as bad debt.

Hotels have different cash collection patterns. Most individual customers pay for their charges with a credit card. After the charges have been processed, the hotel is electronically credited each individual amount. However, one does not know exactly what percentage of guests will charge their accounts or pay some other way, by check or cash.

Groups, corporate, and government accounts can all pay individually upon departure, or more likely, all charges will go to a master account. The master account can be processed and billed to the company upon the group's departure. This would occur when a group only has one function and does not have a running account. However, for most accounts of this type, there is a running total and the company is billed monthly for charges the group has incurred during the period. As everyone knows, some companies can be very slow in paying their bills, especially big corporations and the government. This fact must be taken into consideration when projecting your cash collections estimation. One last monkey wrench in this whole system is advance

deposits. Many groups and individuals are required to leave advance deposits to guarantee space. This will make the estimation of cash collections even more difficult because you do not know where and when these deposits will occur.

The next step for a manufacturer would be to construct a production budget. However, for a service firm this would not be appropriate, they are not building anything, they are selling a service (e.g., lodging). The sales budget and the production budget are identical for service businesses.

From the production budget a manufacturer would then develop a direct materials budget, direct labor budget, and overhead budget. However, a hotel would do this a little differently. It can construct a direct materials budget, but it is somewhat difficult to estimate. For a hotel, this would primarily be the food and beverage that it sells. The demand for the food and beverage is difficult to exactly estimate, but a ballpark figure can be calculated.

A direct labor budget is probably one of hotel's most critical budgets, along with the sales budget. Hotels, especially full-service luxury resorts, are very labor intensive. Based upon projected sales, hotels can budget their expected labor costs. When the actual budgeted period has begun, these figures are watched very closely for any variations. A target productivity is sought by each department. When a difference occurs between the budgeted figure and the actual numbers, this will cause an investigation.

Overhead for a hotel is like a factory. Any cost that is not direct labor or direct materials will be accounted for as overhead. For a hotel, its overhead can be broken down into two main categories:

1. rooms overhead and
2. food and beverage overhead.

These two areas are the main revenue centers for most hotels. There is a fine line in what costs could be direct labor or materials or overhead. It falls to management to classify each cost.

The next step for a manufacturer would be to develop a cost of goods sold budget. For a manufacturer this budget is helpful in setting prices and estimating gross income. For a hotel, this budget step would only yield minimal benefit. Hotels do not produce products, as we all know, they provide services. A cost of goods sold budget would provide a hotel with the cost of major departments such as rooms and food and beverage.

Now the selling and administrative (S&A) expense budget would be compiled. This budget is as helpful to a manufacturer as a hotel. All organizations need to know their selling expenses. The selling expenses are combined with general administrative costs. This budget combines both fixed and variable S & A costs such as insurance, rent, office salaries, sales salaries, and commissions.

Now you have reached the step in the budgeting process where different parts of the budget you have previously constructed are combined: the budgeted income statement. This

statement summarizes the various component projections of revenue and expenses for the budget period. This is usually an annual budget, however, for better control, it may be done quarterly or even monthly. This budget subtracts variable expenses from sales to obtain a contribution margin. Then it subtracts fixed expenses to arrive at operating income, less interest expenses providing income before taxes (IBT). Income taxes are subtracted to produce your goal: net income.

A cash budget also needs to be prepared. This budget will signal when there will be cash surpluses or shortages. This budget is very important; remember, a company can go broke while making a profit. By having this budget available, one will know when funds are available for investment growth or expansion, or when funds are just needed to pay the bills.

When all the budgets have been completed, a budgeted balance sheet can be compiled. The balance sheet is constructed by adjusting the balance sheet from the period that just ended. The budgeted balance sheet serves three primary purposes: it can disclose potentially unfavorable financial conditions; it allows management to perform a number of different ratio calculations; lastly, it highlights future resources and obligations.

CHAPTER 19
BUDGETING FOR NONPROFIT ORGANIZATIONS

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- Identify the main features of nonprofit organizations (NPOs)
- List the three major types of NPOs
- Define *funds.*
- Explain the concept of *encumbrances.*
- Explain why budgeting is particularly important to NPOs
- Discuss the characteristics that are unique to budgeting for hospitals, colleges, churches, and professional associations.

This chapter is an overview of the budgeting process with nonprofit organizations, intended to give a general picture. Nonprofit organizations ordinarily do not pay income, property, or sales taxes. Most nonprofit entities are service organizations. Planning is needed to accomplish goals in a productive, economical way.

Nonprofit organizations can be broken down into three major types. The first is comprised of voluntarily supported organizations, such as hospitals, churches, colleges, foundations, health and welfare agencies, and privately funded schools. The second type includes organizations supported through tax assessments, such as government units and state-supported schools. The third type operates primarily for the benefit of its supporters, such as cooperatives, country clubs, and other community-based organizations.

Budgets are widely employed by nonprofits. Budgets are usually required by regulatory authorities, e.g., legislatures, boards of trustees, and administrative agencies that monitor activities. Because nonprofits rarely produce products, they do not begin with a sales forecast. They provide services to their users and must prepare a forecast of the services to be rendered during a specific planning horizon (typically one year) to establish a starting point for the master budget.

In the not-for-profit organization, some form of planning tool is essential to ensure that the activities meet service objectives. The major planning tool is the budget. The budget is the formal statement of expected resources and proposed expenditures. In many government units, the budget is deemed so significant that it may be in legal form with limits placed on government expenditures. In many other not-for-profit organizations, the budget requires formal approval of a governing body such as the board of directors or trustees. The nonprofit budget process includes long-range planning, program planning, budget planning, budget development, and budget control.

The nonprofit organization must find an alternative method to quantify its success other than profit, to control its operations, to appraise performance, and to make resource allocation decisions. This increases the need for the nonprofit organization to formulate its priorities before budget development.

The objective of financial reporting is accountability to the public rather than to investors. There is no profit distribution. The accounting equation associated with fund accounting is: Assets = Restrictions on Assets. A nonprofit entity may have a surplus or deficit depending on whether revenues exceed expenditures.

Many accounting and budgeting techniques that were originally developed for business can be applied by nonprofits. These include:

1. responsibility center accounting,
2. flexible budgeting,
3. cost standards and performance,
4. work measurement techniques, and
5. time reporting.

Operating objectives and procedures must be set to accomplish goals. An evaluation is needed of tasks to be accomplished and costs to be expected. Funds are established to ensure accountability and expenditure for designated purposes. The adopted budget is the maximum amount the organization can spend. Many agencies are funded by federal, state, or local governments. Some nonprofit entities such as charities rely on contributions and dues. Revenues must be raised and expended in accordance with special regulations, restrictions, or limitations. This chapter discusses planning, recordkeeping and reporting, budgeting and accounting bases, budget development and control, budgeting revenue and expenditures, effectiveness and control measures, organization structure, functional and program reporting, and budget adaptability. It presents an overview of the budgeting aspects for government, voluntary hospitals, colleges, and professional associations.

PLANNING

A long-term plan should be formulated based on short-term objectives. Programs should be evaluated to ascertain if they should be continued. New programs should be formulated. Capital expenditures should be made for long-term viability and growth. Alternative ways to accomplish objectives should be specified. The major activities in the planning stage are defining major objectives, specifying strategies for accomplishing objectives, and initiating the program planning process.

The long-term planning process begins with a mission statement that reflects the entity's purpose, specifies objectives to be reached, and identifies viable paths (or strategies) that may satisfy these objectives. The mission statement should be broad enough to be flexible and noncontroversial. It should require very few modifications over the years. The fiscal policies supporting that mission statement can be more specific and subject to revision as the situation changes.

If the organization does not have a statement of purpose, it should develop one. If there is an existing "outdated" statement of purpose, it should be modified. Once the statement of purpose is clearly established, more specific long-term objectives consistent with this purpose should be defined.

Next comes devising ways to accomplish objectives. There may be numerous such strategies, some more feasible than others. The purpose at this stage is to consider alternatives and not to assess them in depth. Detailed analysis comes in the program planning phase.
As objectives are being formulated and strategies for achieving them identified, the organization should initiate a program planning group including "key" policy makers such as the director, financial officers, and departmental supervisors. The group's role is to take the statements of purpose and objectives formulated in the long-range planning phase and translate these into programs.

FUNDS

Every nonprofit organization contains a fund through which-its operations are handled. Among governmental and municipalities, this is referred to as the general fund. This fund consists of resources used to conduct general operations. The general fund shows the inflow of resources, typically in the form of taxes, licenses, fines and forfeits, governmental assessments, and miscellaneous revenue. The budget will also include cash outflows for such activities as general administration, sanitation, recreation, public safety, and education.

A fund is a fiscal and accounting entity with a self-balancing set of accounts which are segregated for the purpose of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions, or limitations.

The following types of governmental funds exist:

General fund—used to account for all financial resources, except those required to be accounted for in another fund.

Special revenue fund—used to account for the proceeds of specific revenue sources that are legally restricted to expenditure for specified purposes. Examples of special revenue funds are those established for the purpose of financing schools, parks, and libraries.

Special assessment fund—services or capital improvements provided by local governments which are intended primarily to benefit a particular property owner or group of property owners rather than the general citizenry.

Capital projects fund—used to account for financial resources to be expended for the acquisition or construction of major capital facilities.

Debt service fund—used to account for the accumulation of resources for, and the payment of, general long-term debt principal and interest.

Enterprise fund—used to account for operations that are financed and conducted in a manner similar to private business enterprises such as utilities.

Internal service fund—used to account for goods and services performed by one department for another on a cost-reimbursement basis. Examples are data processing and maintenance.

Trust and agency fund—used to account for assets held by a government unit as trustee or agent.

RECORDKEEPING AND REPORTING

A budget should be prepared for each fund group and a total budget for all funds combined. Funds may be restricted or unrestricted. Restricted funds are restricted by outside agencies or persons. Unrestricted funds have no external restriction as to use or purpose.

Financial reports for nonprofit entities, except for hospitals and health and welfare agencies, typically reflect the sources of attained dollars and the methods in which those dollars have been used in reporting the results of their overall operations. Minimal attention is placed on measuring the benefits that these organizations have provided from their resources.

A host of differences in accounting methods in the nonprofit sector compared to those in the private sector may materially impact nonprofit budgeting procedures. Fund accounting is practiced in most areas of the government sector. An entity that employs fund accounting will report a balance sheet and statement of activity for each fund. Fund accounting requirements may make the budgeting process more difficult because a single transaction may need to be classified in more than one way including by source, by function or program, by responsibility unit, and by natural object of expenditure. The budget must be prepared along these same lines.

Many nonprofit entities use either the cash basis method to account for revenues and expenses or the modified accrual method. Under the latter, the cash basis books are converted to accrual at year's end. A cash-based accounting system records actual cash receipts and disbursements, but not payables or receivables. Thus, budget data may be inadequate. Budget reports will convey no knowledge of receivables due or commitments to pay for goods and services already received. Depending on the net effect of accrual adjustments, a cash basis statement could be substantially over or under budget when restated on the accrual basis.

Other accounting concerns include recording "expenditures," measuring goods and services acquired during an accounting period, and measuring goods or services used or consumed during an accounting period. Further, some nonprofit organizations, such as religious institutions and most government funds, do not depreciate their fixed assets. They keep track of expired capital costs through separate records that do not enter the financial statements. A final area of difference concerns donated goods and services, which are unique to the nonprofit arena. Most are valued and reported only if the following conditions exist:

1. the services performed are part of the organization's normal functions and would otherwise be conducted by paid personnel,
2. the organization has control over the services being rendered, and
3. the value of the services can be measured.

External funding sources influence the manner in which a nonprofit organization budgets and accounts for its costs. External parties establish reporting principles that the recipient nonprofit organization must fulfill as a precondition to obtaining funding, or being reimbursed for costs incurred.

A prime budget concern for the recipient organization is to be reimbursed for all of its grant or contract-related costs and not be required to meet any unexpected costs from general funds. It will be beneficial to do the following:

1. minimize grant-related costs that are not permitted for reimbursement under the funding party's guidelines,
2. account for and charge to the funding party as many indirect and administrative costs as can be appropriately attributed to the grant,
3. assure there are no cost overruns on grant projects, and
4. find ways to charge to the project the costs of scaling down a grant project after the cut-off date and by so doing absorbing the least amount with general funds.

Nonprofit entities are increasingly being requested to report their expenses on a functional, or program, basis. This requirement represents an improvement in reporting for two reasons. First, it focuses the nonprofit financial reports on what the end results are of an organization's use of its funds instead of monitoring the source of the funds. This facilitates determining how well the organization is accomplishing its objectives. Second, it makes the organization think through its programs, to collect cost information, and to start to manage itself along program lines.

GOVERNMENT BUDGETS AND ACCOUNTING BASES

Profit, if any, accrues to the benefit of the particular governmental or institutional unit only. Budgets are adopted and recorded in the accounts of the related fund. Encumbrances, which are contractual obligations, are given effect in some government funds.
Budgetary accountability differs from for-profit accounting in that budgetary amounts are actually recorded in the accounts of a fund. Recording the budgetary balances in the accounts has a dual effect. The control aspect of the budgetary function is stressed and recognition is given to the legal foundations of the budget.

The need for budgetary recording in the accounts is consistent with the responsibility focus of fund accounting. The concern is for performance in terms of authority to act. Recording of both the budget and actual transactions helps to allocate responsibility.

Government funds (except for proprietary funds and trust and agency funds) use the modified accrual accounting basis. Revenue is recognized when it becomes available and measurable. Expenditures are recognized in the period in which the liability is incurred *except for:*

- Inventories of materials and supplies, which may be considered expenditures either when purchased or used.
- Interest on general long-term debt, which is recognized when due.
- Use of encumbrances.

GOVERNMENT RECORDKEEPING FOR BUDGET ACCOUNTABILITY

The entry to record the adoption of a budget is:

Estimated revenues	70,000,000	
Fund balance	200,000	
Appropriations		70,200,000

Estimated Revenues is the authorization to raise funds while Appropriations is the authorization to spend funds. Fund Balance is similar to an equity account. In this case, there is authority to spend $70,200,000, of which $70,000,000 will come from various revenues and $200,000 will be applied from the preceding year's closing fund balance. Of course, the Estimated Revenues and Appropriations budget lines will each be broken down into an itemization of specific sources of revenue and expenditure categories.

The entry to record the closing of a budget is:

Revenues		
Fund balance		
Estimated revenues		
Expenditures		
Encumbrances		

Budgetary and actual accounts affect fund balance.

GOVERNMENT INTERFUND TRANSACTIONS

There may be interfund loans or advances which are temporary shifts of resources to be repaid. They are recorded in "due to" and "due from" accounts. Transactions which represent reimbursements from one fund to another are classified as expenditures in the responsible fund and as reductions of expenditures in the fund being reimbursed.

Quasi-external transactions would be treated as revenue, expenditures, or expenses if they involved organizations external to the government unit. Examples are electricity generated by a utility fund and for the general fund, or services performed by an internal service fund for another fund.

Interfund transactions which are not loans or advances, reimbursements, or quasi-external transactions are classified as "transfers." Examples of transfers are:

1. transfers of tax revenue from a special revenue fund to a debt service fund and
2. transfers from a general fund to a capital project fund.

CAPITAL AND OPERATING BUDGETS

Capital budgets apply to the purchase or sale of assets that have a useful life of more than one year. However, operating budgets are prepared annually showing expected revenues, support, and expenses. Nonprofit organizations that are on a cash basis with little capital plans will not

need to separate capital from the operating budget, but nonprofits with large capital programs must separate these two. Failure to do so distorts the annual operating budget.

BUDGET DEVELOPMENT

Initially, the nonprofit organization must estimate revenues. This is typically achieved by the chief financial officers because many units do not fund themselves or do so only partly. Decisions must be made by upper management with regard to issues such as what service levels to provide, what to charge for services performed, how to obtain other funds required to support these services, and how to allocate these funds among programs or departments.

The organization should determine its revenues first on an overall basis, and then on individual revenues. This gives the units initial direction in budget preparation. The unit's budget report should identify revenue by type, expenses by category, output measures, and unit cost for the service. It is difficult to project revenues over the next year. The organization may estimate different revenue levels on a best-case, worst-case basis, and then have its program budget and make plans for activity at several different levels.

After the responsibility unit receives estimates of its activity level and its expected revenues, it then budgets its expenditures. Worksheets should be prepared to break expenditures into categories, including personnel compensation, supplies, capital expenditure items, and so on. When preparing expense budgets, responsibility units need to evaluate how their costs change with the service level provided. Many costs will be fixed over a large range of activities, whereas, some costs will vary directly with the level of activity.

After the responsibility center reports are prepared, they should be combined into a consolidated budget for the organization. During the consolidation process, safeguards should assure that a proper balance between revenues and expenses is kept, the stated objectives and planned activities of the responsibility centers do not conflict, and the budget is in conformity with the organization's long-term strategic and financial objectives.

The operating budget may be prepared in several ways. One of the most common approaches is to take the previous year's budget and to make needed adjustments for the current environment, line by line for each item of revenue and expenditure for each activity detailed in the budget. These are then summed to arrive at budget totals. One of the major difficulties with this approach is that it often leads to arbitrary adjustments of revenue and expenditure items and it does not encourage alternative operating methods.

Another way to develop a budget is to determine overall revenues and/or allowable expenditures and then to apportion percentages to certain activities. This method, too, fails to encourage alternative operational plans. It also encourages spending "all of the allotted amounts for fear that budgeted amounts would be cut the following year."

When revenue is not related to costs, guidelines stated in nonmonetary, service-related terms may seem more useful in guiding budget preparation. In client-oriented entities, budget guidelines could be based on the number of clients served and the breakdown of type of service generally provided clients. Other organizations may formulate budgets on the number of hours of

operations and estimated traffic during these hours. Nonmonetary guidelines are often difficult to develop for all areas, however; thus both monetary and nonmonetary guidelines may be combined where feasible in the budget guideline document providing the maximum amount of guidance.

In addition to guidelines for costs and/or operations, guidelines must also be issued on the format and timing of the budget. "Program directors" may be asked to prepare their budgets to satisfy program objectives, but they need some form of procedure to fulfill this. Costs should be collected in a manner consistent with those of previous years to aid comparison. Further, area costs should be broken down into unit costs where practical and some form of cost per unit of output should be developed; these steps facilitate not only analysis at the budget stage but also comparisons of actual versus planned performance.

The availability of resources for a particular area is often based on a judgment allocation. Therefore, whether these allocated figures are made available to lower-level managers must be an upper-management or budget-officer decision, since it is their responsibility to match revenues and costs while putting the entire budget together.

BUDGETING REVENUE

The estimated revenue for the not-for-profit firm differs from that of the profit-oriented firm in two ways. First, the revenues of many not-for-profit organizations have no direct relationship to the services provided. Second, since the firm is nonprofit, the excess of revenues over expenditures in any period should be available in the next period since the objective in any one period is to have an equality between revenues and expenditures. Finally, a difference arises in the budgeting process: rather than the estimation of revenues limiting expenditures, necessary program expenditures may be estimated first and revenues raised accordingly. For example, property taxes are often "levied" on this basis.

Most not-for-profit organizations have one or more revenue sources which provide the bulk of their resources. These are called primary sources, while smaller amounts from varied sources are called secondary sources. In estimating primary revenues, the actual sources are easily identified. A city's primary source will generally be the property taxes; a hospital's primary source is patient revenue from either the patients themselves or from "third party reimbursements." A church's primary source is its weekly offerings from its members. A university may have several primary sources, such as tuition and room and board.

Nonprofit organizations often have difficulties in budgeting revenues because so many revenues do not result directly from the rendering of services to individuals. The annual income on investments of endowment funds may be recorded as part of operating revenue; however, there is controversy over just how to measure this income. Grants and contracts obtained from the federal government, foundations, or other third parties often pose questions for budgeters. Uncertainties exist whether or not they will come through, and if so, when and for how long a period of time. Fund raising or membership drives may boost revenues, but uncertainties exist about what new gains can be made and whether past fund-raising success can be maintained. The higher the proportion of soft revenue sources (resulting from one-time promotional efforts which

may not be renewable) in an organization's budget, the greater the risks that it will not be accomplished.

Some nonprofit organizations obtain much of their financial resources from sales. This is the case with many community hospitals, private schools and colleges from student tuition, and research organizations whose resources come from contracts for specific projects. Other nonprofit entities receive substantial financial support from sources other than revenues from services rendered. These are referred to as "public-supported organizations." In these organizations, there is no direct connection between the services received and the resources provided. Individuals receive essentially the same services from a government unit regardless of the taxes paid.

When revenues fail to cover estimated costs, the first reaction is often to cut costs by cutting services so that they do not exceed estimated revenues. Another method of balancing the budget is to increase revenues by raising taxes or fees or having "special fund drives."

EXPENDITURES

The accurate forecasting of departmental expenditures is a difficult but necessary task. While revenue sources may be somewhat limited, the width of expenditures is usually broad. The estimation of expenses are usually more manageable than budgeting revenue; however, many times it is almost impossible to match expenses incurred in providing a program service, or in operating a department, to any specific revenue sources that support these services. It will be easier to prepare the budget if expenditures are grouped into separate categories: salaries, supplies, operating expenses, and capital equipment.

For many not-for-profit organizations, the personnel costs represent a major portion of current operating expenditures. Therefore, this area should be constantly monitored since it has a major impact on the total budget.

Operating expenditures are defined as expenditures other than those for personnel services, supplies, and capital outlays. They include gas and electric utility bills, telephone expenses, and reproduction costs.

ENCUMBRANCES

Encumbrances are an integral part of budget accountability. Encumbrances represent commitments related to unfilled contracts for goods and services (including purchase orders). The purpose of encumbrances is to prevent further expenditure of funds in light of commitments already made. At year-end, encumbrances still open are not accounted for as expenditures and liabilities but, rather, as reservations of fund balance.
The closing entry for a budget at the end of the year is:

Fund Balance	
	Encumbrances

BUDGETARY CONTROL

Cost controls should be implemented to save on costs. This may allow for expanded services and increased user services. Many cost items are of a discretionary nature. Because there is no "bottom line" in nonprofit entities, identifying objectives are more difficult than in profit-making businesses. Therefore, control systems are not used as much in nonprofits for several reasons. First, organizational goals are less clear and are often multiple, necessitating trade-offs. Second, professionals (such as physicians, lawyers, and teachers) typically dominate nonprofit organizations and are less receptive to control systems and measures. Third, measurement is more difficult because there is no profit to determine; a heavy amount of discretionary fixed costs exist; and the relationship between inputs and outputs is difficult to specify. Thus, the budget process in the public sector is related to playing bargaining games with higher authorities to obtain the largest authorization of discretionary fixed costs.

When budgetary outlays for a unit are approved, they are appropriated for the individual items in the budget. Management can spend appropriable funds up to the amount provided in the budget for each item. Typically, any expenditure over the prescribed amount must receive authorization. The term appropriation control can be used to describe the mechanism used to regulate the amount of resources that can be expended for salaries, supplies, and other cash outflows.

Budgetary control reporting for nonprofit entities is similar to profit-oriented ones. Heads of responsibility units normally receive monthly reports showing actual performance to budget. Financial and nonfinancial statistics of the units' activities are provided.

Reports and variances should be reviewed and evaluated by the heads of responsibility centers, as well as by financial officers and administrators higher up in the organization. Variance reports should be broken down into two parts:

1. that part arising from offering more or less services than what was originally budgeted and
2. that part due to reasons of efficiency or unplanned changes in input prices.

Variance analysis may show that an organization or responsibility center needs to modify its original budget and to cut back or expand its previously planned activities.

Nonprofit budgets are often treated as inflexible once they are established. However, nonprofit organizations do have choices over what services to offer and where to target them. This is particularly true for nonprofit organizations that can vary client services somewhat and for which they get at least partial payment from the clients. The budget should not only be considered a planning device but also as a means of identifying needs for change and making those changes on a timely basis.

As an element of control, budgets in nonprofits should distinguish between restricted and unrestricted sources and uses of funds and should show any expected transfer from one to the other. This is important because the management of the nonprofit has no discretionary use over the restricted funds. These funds must be used for the purposes for which they were obtained. To

use them otherwise is to violate the contract under which the funds were obtained. Therefore, it is important that if the amounts of restricted funds are shown as receipts in the budget, then it is similarly shown that they are restricted. Restricted funds do not always come from external sources. The board of directors may set aside a certain portion of the annual revenues for some special reason and restrict the management from using it for any other reason.

Guidelines must be developed because services provided and revenues raised are frequently unrelated. Therefore, guidelines often take a form which does not necessarily lead to efficient use of resources such as "costs should not exceed last year's by more than the rate of inflation." Other guidelines such as overall reductions in expenditures are more common. Areas with a high dependence on fuel and utility costs may need one specific set of guidelines, while the areas unaffected by these economic changes may apply a different set of guidelines.

VARIANCES

Revenue and costs should be accumulated. The variance between actual and budgeted revenue and costs should be computed. Problem areas should be identified so corrective action may be taken.

A flexible budget can be established based upon the level of expected services, taxes, and assessments. Then, variances can be evaluated against actual operating results and the budgeted amount for the actual level of service. A budgeted general fund balance sheet estimates resources available in the general fund at the end of the period. Typically, categories with unfavorable variances that are controllable by management will be evaluated for possible methods of improvement.

EFFECTIVENESS AND CONTROL MEASURES

Most nonprofit organizations provide services, not tangible products. Thus, the problem of developing measures of effectiveness in providing services is especially difficult. One principal operating problem is that a service must be provided at a particular time. This causes difficulties in short-term scheduling and longer-term capacity planning. Another problem is that most services are labor-intensive and the labor required may vary substantially from one time a service is performed to the next. This makes service work more difficult to schedule and control than machine operations. The measurement of services is perhaps an even more fundamental problem. Many services are difficult to quantify. Measuring and controlling the quality of services is also difficult particularly when professional effort is involved. Standards of quality simply do not exist. Efficiency measurements are similarly difficult to obtain.

ORGANIZATION STRUCTURE

The structure of a nonprofit entity may restrict its efforts to establish an effective budgeting system. One major reason may be the absence of a reliable responsibility structure. A responsibility system of budgeting divides the organization into work units, assigns individual responsibility for each activity of the unit, and classifies costs as controllable or noncontrollable by that *unit.* It is used as a tool for managers to control that area of the organization for which they are directly accountable. Many nonprofit entities have recognized that, although

responsibility budgeting is a good tool for controlling expenditures, it does not provide sufficient control over services performed.

This recognition has brought to the surface the concept of program structure. The program structure aligns itself with either the types of services the organization renders or the classes of individuals who benefit from its services. Nonprofit entities have not often organized along program lines. Their accounting systems do not typically support program concepts. In consequence, program costs are difficult to quantify and record on a consistent yearly basis.

The program planners should start by turning each possible strategy defined in long-range planning into specific actions. The following questions should be raised: What organizational functions does it involve? What groups does it reach? What objectives does it satisfy? Several alternative strategies will likely exist at this time to meet each objective. Program planners will need to evaluate individual strategies to determine which one meets the prescribed objective at minimum cost. Cost-benefit analysis may be helpful. However, since benefits will almost always be imprecisely estimated, organizations cannot decide solely on the basis of the analysis.

Cost-benefit analysis will reveal which strategies will meet the objective and at what cost. It will eliminate alternatives which are financially not justified. However, the program planners must ask several other questions be-fore a final decision. First, they must determine whether the resources are available to undertake the suggested program. If not, the objective needs to be modified or an alternative strategy selected. They must also study the risk involved and whether there are any environmental constraints. Finally, planners should take into account whether a new program is a good fit.

Once the desired strategies are chosen, they need to be converted into specific program plans. Some areas a program plan should address are the objectives it will help to achieve, its benefits to the public, the costs of the program, funding, risks, personnel needed, and time to accomplish.

On-going programs should be reviewed frequently. Older programs may have outgrown their usefulness or lost the support of their constituency. The review should consider ways to restructure the program, to improve its efficiency, or to merge it with other programs. Formal program planning leads to a program structure. Many nonprofit entities have formulated meaningful program structures, but fewer of them have actually translated them into budget terms. Program plans are devised with a longer time period in mind than the usual one-year budget. The plans include less detail about costs and revenues and do not provide an operating plan. This means that program plans require some translation into specific dollar terms to become useful inputs to annual budgets.

Secondly, the program structure, which is directed on outputs, often goes across traditional departmental responsibility lines. This causes the organization to emphasize the services it provides. Organizations such as hospitals, however, will not shift their organizational structure to match programs. The reason is that traditional departmental structure corresponds to the background and training of the organization’s staff and to the way they divide the work. The

daily activities follow departmental lines, and so must the budget if the organization is to control these activities.

If the program budgets are not formally used, the organization should monitor how well it is accomplishing its program objectives. Ways to do this include having a committee to track and report on program performance, reporting on program revenues and expenses, establishing performance measures, and reporting on the success in meeting program objectives.
The budget structure follows the daily operating structure. If the organization operates on a program basis, the budget will be a program budget. If the organization is departmental, so is the budget. If the organization is arranged departmentally, revenues and expenses will be tracked by natural objective of classification and department. This will give a department supervisor the data to control expenses and revenues. If the organization has completed program planning, it should also classify revenues and expenses by program. A computerized accounting system with a properly designed chart of accounts can provide program-based budget reports in any detail level of responsibility.

The development of measurement tools is the next step in budget planning. An accounting system must be supplemented by both financial and non-financial measures that show what the department or program is doing with its resources and what it is achieving. In nonprofit entities, efficiency measures are more common because they are easily generated from internal statistics and do not require the organization to measure its outputs.

In most cases, a program may rely more on effectiveness measures, while a department may rely more on efficiency measures. However, each program and department should have both effectiveness and efficiency in varying portions.

Budget guidelines should then be prepared. Directors should communicate general information that the department or program heads can follow.

FUNCTIONAL OR PROGRAM REPORTING
Certain not-for-profit organizations, such as voluntary health and welfare, report expenses by function (or program). There should also be supporting schedules providing details of the items included for each program. Under functional reporting, expenses (expenditures) are accumulated according to the program purpose for which costs were incurred rather than by object of expenditure (i.e., research program).

A preliminary budget for each program is needed so that the organization may compare benefits and costs before selecting among programs. Be-fore the chosen programs can be implemented, a final budget must be formed so that the managers know the amount of resources that is planned for the programs, the sources of these dollars (from grants, fees, and so on), the way those dollars are expected to be allocated among competing uses within each program, and a schedule of expenditures and receipts over the life of the program.

BUDGET ADAPTABILITY

Nonprofit budgets are typically not easily adapted to changing circumstances. One reason is that many nonprofit entities do not undergo significant variations in the service levels they provide annually. Another reason is that their cost structure often contains many costs that are deemed fixed. Noticeably, this lack of adaptability arises from prevailing attitudes in nonprofit organizations. Most entities are simply not accustomed to the idea of modifying budget allocations once they are set and are not yet willing to adapt to flexible budgeting techniques.

BUDGET PARTICIPANTS

Preparation of the budget tends to involve just about anyone of importance who is associated with a nonprofit entity, including community representatives, funding sources, and regulatory agencies. These external parties have different backgrounds and often have different budget expectations. A nonprofit organization must respond directly to these external forces which often have conflicting objectives and can therefore make it difficult to manage and plan the organization's future. Internal budget participants may also have different goals. Professional concerns for the quality of service often tend to override issues of cost. Financial managers of nonprofit entities often have a different background from that of others in the organization and may set *f*inancial priorities that are at variance with the interests of the professionals. The budget often is a compromise between various conflicting internal parties.

VOLUNTARY HOSPITALS

Voluntary hospitals report:

- *Patient service revenues—directly* related to patient care.

- *Other operating* revenue—revenues indirectly related to providing patient services such as tuition from educational programs, cafeteria revenue, parking fees, gift shop revenues, and research grants.
- *Nonoperating gains and losses—incidental* transactions to operation from events beyond management's control. Examples are general contributions, income from investments, rents, unrestricted income from endowment funds.

Revenue is subdivided as to public support and revenue.

- Public support is the conveyance of property without consideration. Examples are contributions, gifts, grants, and bequests.
- Revenue such as membership dues and interest income.

The fund groups for voluntary hospitals are:

- *General (Unrestricted)funds* comprising of:

—*Operating* funds—for routine hospital activities including plant assets and related long-term debt.
—*Board-designated funds—resources* set aside for specific use.

- *Restricted funds* comprising of:

  —*Specific* purpose—resources restricted for specific operating purposes.
  —*Endowment—principal* remains intact. Earnings may or may not be available subject to donor restrictions.
  —*Plant replacement* and expansion—resources restricted for plant and equipment acquisition.

Hospital budgets must respond to the expected level of operations. Hence, a flexible budget should be established for each revenue-producing department. The departmental costs must be separated into their fixed and variable components. This budget allows management to forecast the cost of providing one unit of service at various levels of operations. Thus, management must estimate the probable level of activities for the period. Then, the operating plan, including cost goals and service billing prices can be formulated. The fundamental billing unit for most hospitals is a day of room occupancy. Consequently, the level of room operations is typically expressed in terms of the rate of room occupancy. In Exhibit 1, actual expenses incurred during the period are compared with the budgeted expenses and the reasons for the variances are given.

COLLEGES AND UNIVERSITIES

Nonprofit entities receive funds from several sources, each with its appropriate subgroups. Colleges and universities usually have more sources than hospitals and most governmental agencies.

The fund groups for colleges and universities follow:

- *Current* funds—resources available to carry out the primary educational objectives of the institution. It may be restricted or unrestricted. University unrestricted current funds, obtained from tuition, student fees, and endowment revenue, can be transferred to various operating activities, unless otherwise specified by the governing board. On the other hand, the use of restricted current funds are specified by the donors or other outside agencies. These funds are usually obtained through endowments, gifts, contracts, grants and appropriations from private organizations and governments for research, public service, or other restrictive purposes.
- *Loan* funds—repayment of principal and interest are returned to the fund and made available for further loans to students and staff.
- *Endowment* funds—principal cannot be used but income earned may or may not be.
- *Annuity and life income* funds—these are restricted funds which provide for repayment to the donor of a portion of fund income.
- *Agency* funds—the resources are managed by the institution as an agent on behalf of others. These funds are restricted. Examples are when the university acts as an agent for student government or faculty organization.
- *Plant* funds—these funds include plant assets and related debt, and assets to be used for future acquisition.

EXHIBIT 1
FLEXIBLE BUDGET

Flexible Budget for Department 1

Level of operations (Related to capacity)	70 percent	80 percent	90 percent	100 percent
Direct expenses (variable)	$262,500	$300,000	$337,500	$375,000
Direct expenses (fixed)	100,000	100,000	100,000	100,000
Allocated general expenses (fixed)	80,000	80,000	80,000	80,000
Allocated service dept. expenses				
Dept. 5 (fixed)	100,000	100,000	100,000	100,000
Dept. 6 (fixed)	20,000	20,000	20,000	20,000
Dept. 7 (semifixed)	55,000	60,000	65,000	70,000
Total expenses	$617,500	$660,000	$702,500	$745,000
Billing units	57,750	66,000	74,250	82,500
Cost per unit of service	$10.69	$10.00	$9.46	$9.03

Flexible Budget Variance Analysis for Department 1

	Actual Expenses	*Budgeted Allocation*	*Variances*
	$320,000	$318,750	(1,250)—Unfavorable
Direct expenses (variable)	101000	100000	(1,000)—Unfavorable
Direct expenses (fixed)	78000	80000	2,000—Favorable
Allocated general expenses (fixed)			
Allocated service dept. expenses			
Dept. 5 (fixed)	20,500	20,000	(500)—Unfavorable
Dept. 6 (fixed)	65,000	62,500	(2,500)—Unfavorable
Dept. 7 (semifixed)	101,500	100,000	(1,500)—Unfavorable
TOTALS	$686,000	$681,250	$4,750—Unfavorable

Direct variable expense variance probably resulted in the department's lack of ability to control variable costs.

Direct fixed expense variance suggests that the departmental supervisor "overspent" his allocated fixed expenses.

Departments 5 and 6 variances probably caused by inadequate methods of cost control.

Department 7 variance could have been caused by having too many employees or the inability to control costs.

In all unfavorable cases, all individual expense items should be reviewed with departmental supervisors.

Municipal accounting principles dictate that the accounting system used provide budgetary control of both revenues and expenditures. Although college and university financial statements do not require such control, a complete system is typically adopted by these institutions.

Although a large number of individual items associated with the budget of a college or university is appropriation controlled, several are formula controlled. This allows allocations to vary with changes in the level of operations. In this regard, the college or university budget is more flexible than that of governmental entities. Hence, budgetary data may be given less formal recognition in the accounts of colleges and universities.

A comparison of fund groups for colleges and universities, voluntary health and welfare entities, and hospitals is provided in Exhibit 2.

EXHIBIT 2
A COMPARISON OF FUND GROUPS

Colleges and Universities	*Voluntary Health and Welfare*	*Hospitals*
Unrestricted	Unrestricted	Unrestricted
Restricted	Restricted	Specific purpose
Plant funds	Land, bldg. & equipment	Plant replacement
Endowment fund	Endowment fund	Endowment fund
Agency fund		Agency fund
Annuity and life		
Income funds		
Loan funds		Loan funds

PROFESSIONAL ASSOCIATIONS

An illustrative budget for a nonprofit professional organization follows in Exhibit 3.

EXHIBIT 3
BUDGETED REVENUE AND COSTS FOR A NONPROFIT PROFESSIONAL ASSOCIATION

	Quarters				
	1	*2*	*3*	*4*	*Annual*
Dues					
Magazine					
Conferences					
Continuing professional education					
Miscellaneous					

Budgeted Costs

	Quarters				
	1	*2*	*3*	*4*	*Annual*
Administration					
Conferences					
Publications					
Committees					
Computer					
Other					

A variance analysis report may then be prepared comparing budget and actual figures, such as:

Variance Analysis Report

	First Quarter			*Annual*		
	Budget	*Actual*	*Variance Percent*	*Budget*	*Actual*	*Variance Percent*
Revenue						
Dues						
Magazines						
Conferences						
CPE						
Miscellaneous						
Costs						
Administration						
Conferences						
Publications						
Committees						
Computer						
Other						

CONCLUSION

A nonprofit is defined as a legal entity which does not conduct substantial commercial activity or earn a profit as its primary purpose. The goal is typically to provide services. In nonprofit organizations, management decisions are intended to result in furnishing the best possible service given resource constraints; success is measured by how much service the organization provides and by how well these services are performed. Basically, the success of a nonprofit entity is measured by how much it contributes to the public well-being.

Nonprofit organizations include governmental and private nonprofit entities. Within the governmental category, there exists federal, state, and local. Within the private grouping, there is a key difference between charities, for which donor contributions are tax deductible, and

commercial and membership organizations, whose donor contributions typically are not tax deductible. The former category includes health, educational, social service, religious, cultural, and scientific. The latter category includes social clubs, fraternal organizations, labor unions, chambers of commerce, trade associations, and business leagues.

GLOSSARY OF BUDGETING TERMS

ADMINISTRATIVE BUDGET a formal and comprehensive financial plan through which management of an organization may control day to day business affairs and activities.

ALLOTMENT a part of an appropriation which may be encumbered or expended during an allotment period, which is usually a period of time less than one fiscal year. Bi-monthly and quarterly allotment periods are most common.

ANALYSIS OF VARIANCES analysis and investigation of causes for variances between standard costs and actual costs; also called variance analysis. A variance is considered favorable if actual costs are less than standard costs; it is unfavorable if actual costs exceed standard costs. Unfavorable variances are the ones that need further investigation for their causes. Analysis of variances reveal the causes of these deviations. This feedback aids in planning future goals, controlling costs, evaluating performance, and taking corrective action. Management by exception is based on the analysis of variances and attention is given to only the variances that require remedial actions.

ANNUAL BUDGET a budget prepared for a calendar or fiscal year. See also Long Range Budget.

CASH BUDGET a budget for cash planning and control presenting expected cash inflow and outflow for a designated time period. The cash budget helps management keep cash balances in reasonable relationship to its needs. It aids in avoiding idle cash and possible cash shortages.

BUDGET a quantitative plan of activities and programs expressed in terms of the assets, equities, revenues, and expenses which will be involved in carrying out the plans, or in other quantitative terms such as units of product or service. The budget expresses the organizational goals in terms of specific financial and operating objectives. Advantages of budget preparation are planning, communicating company-wide goals to subunits, fostering cooperation between departments, control by evaluating actual figures to budget figures, and revealing the interrelationship of one function to another. See also Master Budget.

BUDGET CONTROL budgetary actions carried out according to a budget plan. Through the use of a budget as a standard, an organization ensures that managers are implementing its plans and objectives and their activities are appraised by comparing their actual performance against budgeted performance. Budgets are used as a basis for rewarding or punishing them, or perhaps for modifying future budgets and plans.

BUDGET VARIANCE
1. any difference between a budgeted figure and an actual figure.
2. flexible budget variance. This is the difference between actual factory overhead costs and standard (flexible budget) costs, multiplied by the standard units of activity allowed for actual production. The budget variance is used in the two-way analysis of factory overhead. It includes the fixed and variable spending variances and the variable overhead efficiency variance which are used in the three-way analysis.

CAPITAL BUDGET a budget or plan of proposed acquisitions and replacements of long-term assets and their financing. A capital budget is developed using a variety of capital budgeting techniques such as the payback method, the net present value (NPV) method, or the internal rate of return (IRR) method. See also Capital Budgeting.

CAPITAL BUDGETING the process of making long-term planning decisions for capital investments. There are typically two types of investment decisions: (1) Selecting new facilities or expanding existing facilities. Examples include: (a) investments in long-term assets such as property, plant, and equipment; and (b) resource commitments in the form of new product development, market research, refunding of long-term debt, introduction of a computer, etc. (2) Replacing existing facilities with new facilities. Examples include replacing a manual bookkeeping system with a computerized system and replacing an inefficient lathe with one that is numerically controlled.

CAPITAL EXPENDITURE BUDGET a budget plan prepared for individual capital expenditure projects. The time span of this budget depends upon the project. Capital expenditures to be budgeted include replacement, acquisition, or construction of plants and major equipment. See also Capital Budgeting.

CAPITAL RATIONING the problem of selecting the mix of acceptable projects that provides the highest overall net present value (NPV) where a company has a limit on the budget for capital spending. The profitability index is used widely in ranking projects competing for limited funds.

CASH BUDGET a budget for cash planning and control presenting expected cash inflow and outflow for a designated time period. The cash budget helps management keep cash balances in reasonable relationship to its needs. It aids in avoiding idle cash and possible cash shortages.

CASH FLOW FORECASTING forecasts of cash flow including cash collections from customers, investment income, and cash disbursements.

COMPREHENSIVE BUDGET see Master Budget.

CONTINUOUS BUDGET an annual budget which continues to the earliest one month or period and add the most recent one month or period, so that a twelve-month or other periodic forecast is always available.

CONTRIBUTION (MARGIN) INCOME STATEMENT an income statement that organizes the cost by behavior. It shows the relationship of variable costs and fixed costs, regardless of the functions a given cost item is associated with.

CONTRIBUTION MARGIN (CM) VARIANCE the difference between actual contribution margin per unit and the budgeted contribution margin per unit, multiplied by the actual number of units sold. If the actual CM is greater than the budgeted CM per unit, a variance is favorable; otherwise, it is unfavorable.

CONTRIBUTION MARGIN (CM) RATIO the contribution margin (CM) as a percentage of sales.

CONTRIBUTION MARGIN (CM) the difference between sales and the variable costs of the product or service, also called marginal income. It is the amount of money available to cover fixed costs and generate profits.

CONTROL CONCEPT a concept that ensures that actions are carried out or implemented according to a plan or goal. See also Control.

COST BEHAVIOR PATTERNS the way a cost will react or respond to changes in the level of activity. Costs may be viewed as variable, fixed, or mixed (semivariable).A mixed cost is one that contains both variable and fixed elements. For planning, control, and decision purposes, mixed costs need to be separated into their variable and fixed components, using such methods as the high-low method and the least-squares method. An application of the variable-fixed breakdown is a break-even and cost-volume-profit (CVP) analysis.

COST-BENEFIT ANALYSIS an analysis to determine whether the favorable results of an alternative are sufficient to justify the cost of taking that alternative. This analysis is widely used in connection with capital expenditure projects.

COST CONTROL the steps taken by management to assure that the cost objectives set down in the planning stage are attained, and to assure that all segments of the organization function in a manner consistent with its policies. For effective cost control, most organizations use standard cost systems, in which the actual costs are compared against standard costs for performance evaluation and the deviations are investigated for remedial actions. Cost control is also concerned with feedback that might change any of all of the future plans, the production method, or both.

COST EFFECTIVE among decision alternatives, the one whose cost is lower than its benefit. The most cost effective program would be the one whose cost-benefit ratio is the lowest among various programs competing for a given amount of funds. See also Cost-Benefit Analysis.

COST-VOLUME FORMULA a cost function in the form of

$$Y = a + bX$$

where Y=the semivariable (or mixed) costs to be broken up
X=any given measure of activity such as volume and labor hours
a=the fixed cost component
b= the variable rate per unit of X
Accountants use the formula for cost prediction and flexible budgeting purposes.

DIRECT LABOR BUDGET a schedule for expected labor cost. Expected labor cost is dependent upon expected production volume (production budget). Labor requirements are based on production volume multiplied by direct labor hours per unit. Direct labor hours needed for production is then multiplied by direct labor cost per hour to derive budgeted direct labor costs.

DIRECT MATERIALS BUDGET a budget that shows how much material will be required for production and how much material must be bought to meet this production requirement. The purchase depends on both expected usage of materials and inventory levels.

DISCOUNTED CASH FLOW (DCF) TECHNIQUES methods of selecting and ranking investment proposals such as the net present value (NPV) and internal rate of return (IRR) methods where time value of money is taken into account.

EFFICIENCY VARIANCE difference between inputs (materials and labor) that were actually used (i.e., actual quantity of inputs used) and inputs that should have been used (i.e., standard quantity of inputs allowed for actual production), multiplied by the standard price per unit.
See also Material Quantity Variance; Labor Efficiency Variance.

FACTORY OVERHEAD BUDGET a schedule of all expected manufacturing costs except for direct material and direct labor. Factory overhead items include indirect material, indirect labor, factory rent, and factory insurance. Factory overhead may be variable, fixed, or a combination of both.

FAVORABLE VARIANCE the excess of standard (or budgeted) costs over actual costs. See also Standard Cost System; Variance.

FINANCIAL BUDGET a budget that embraces the impacts of the financial decisions of the firm. It is a plan including a budgeted balance sheet, which shows the effects of planned operations and capital investments on assets, liabilities, and equities. It also includes a cash budget, which forecasts the flow of cash and other funds in the business.

FINANCIAL PROJECTION an essential element of planning that is the basis for budgeting activities and estimating future financing needs of a firm. Financial projections (forecasts) begin with forecasting sales and their related expenses.

FIXED BUDGET see Static Budget.

FIXED OVERHEAD VARIANCE the difference between actual fixed overhead incurred and fixed overhead applied to production.

FLASH REPORT a report that provides the highlights of key information promptly to the responsible managerial accountant. An example is an exception report such as performance reports that highlight favorable or unfavorable variances. A flash report allows managers to take a corrective action for an unfavorable variance. See also Performance Reports.

FLEXIBLE (VARIABLE) BUDGET a budget based on different levels of
activity. It is an extremely useful tool for comparing the actual cost incurred to the cost allowable for the activity level achieved. It is dynamic in nature rather than static.

FLEXIBLE BUDGET FORMULA See Cost-Volume Formula.

FLEXIBLE BUDGET VARIANCE see Budget Variance.

FLEXIBLE BUDGETING see Flexible Budget.

INVESTMENT CENTER a responsibility center within an organization that has control over revenue, cost and investment funds. It is a profit center whose performance is evaluated on the basis of the return earned on invested capital.

LABOR EFFICIENCY VARIANCE the difference between the amount of labor time that should have been used and the labor that were actually used, multiplied by the standard rate.

LABOR RATE (PRICE) VARIANCE any deviation from standard in the average hourly rate paid to workers.

LABOR VARIANCE the difference between the actual costs of direct labor and the standard costs of direct labor. Labor variance is divided into two specific variances: labor rate variance and labor efficiency variance.

LONG RANGE BUDGET projections that cover more than one fiscal year; also called strategic budgeting. The five-year budget plan is the most commonly used in practice. See also Annual Budget.

MANAGEMENT BY EXCEPTION a management concept or policy by which management devotes its time to investigating only those situations in which actual results differ significantly from planned results. The idea is that management should spend its valuable time concentrating on the more important items (such as the shaping of the company's future strategic course).

MANAGEMENT BY OBJECTIVE (MBO) a system of performance appraisal having the following characteristics: (1) It is a formal system in that each manager is required to take certain prescribed actions and to complete certain written documents; and (2) The manager and subordinates discuss the subordinate's job description, agree to short-term performance targets, discuss the progress made towards meeting these targets, and periodically evaluate the performance and provide the feedback.

MANAGEMENT CONTROL SYSTEM a system under which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's goals.

MASTER (COMPREHENSIVE) BUDGET a plan of activities expressed in monetary terms of the assets, equities, revenues, and costs which will be involved in carrying out the plans. Simply put, a master budget is a set of projected or planned financial statements.

MATERIALS PRICE VARIANCE the difference between what is paid for a given quantity of materials and what should have been paid, multiplied by actual quantity of materials used.

MATERIALS PURCHASE PRICE VARIANCE see Materials Price Variance.

MATERIALS QUANTITY (USAGE) VARIANCE the difference between the actual quantity of materials used in production and the standard quantity of materials allowed for actual production, multiplied by the standard price per unit.

MATERIALS VARIANCE the difference between the actual costs of materials and the standard costs of materials. Material variance is divided into two specific variances: materials price variance and materials quantity variance.

OPERATIONAL (OPERATING) BUDGET a budget that embraces the impacts of operating decisions. It contains forecasts of sales, net income, the cost of goods sold, selling and administrative expenses, and other expenses.

PERFORMANCE BUDGET a medium to short range budget of used in governmental accounting. It is typical of the type incorporated by a program planning budgeting system (PPBS) but without references to long range goals.

PLANNING the selection of short- and long-term objectives and the drawing up of tactical and strategic plans to achieve those objectives. In planning, managers outline the steps to be taken in moving the organization toward its objectives. After deciding on a set of strategies to be followed, the organization needs more specific plans, such as locations, methods of financing, hours of operations, etc. As these plans are made, they will be communicated throughout the organization. When implemented, the plans will serve to coordinate, or meld together, the efforts of all parts of the organization toward the company's objectives.

PRO FORMA BALANCE SHEET see Budgeted Balance Sheet.

PRO FORMA INCOME STATEMENT see Budgeted Income Statement.

PRODUCT LIFE CYCLE the concept that is particularly useful in forecasting and analyzing historical data of new products. It presumes that demand for a product follows an S-shaped curve growing slowly in the early stages, achieving rapid and sustained growth in the middle stages, and slowing again in the mature stage.

PRODUCTION BUDGET a schedule for expected units to be produced. It sets forth the units expected to be manufactured to satisfy budgeted sales and inventory requirements. Expected production volume is determined by adding desired ending inventory to planned sales and then subtracting beginning inventory.

PROFIT CENTER the unit in an organization that is responsible for revenues earned and costs incurred. A manager of a profit center has control over both revenues and costs and attempts to maximize profit.

PROFIT PLANNING a process of developing a profit plan which outlines the planned sales revenues and expenses and the net income or loss for a time period. Profit planning requires preparation of a master budget and various analyses for risk and "what-if" scenarios. Tools for profit planning include the cost-volume-profit (CVP) analysis and budgeting.

PROJECTED (BUDGETED) BALANCE SHEET a schedule for expected assets, liabilities, and stockholders' equity. It projects a company's financial position as of the end of the budgeting year. Reasons for preparing a budgeted balance sheet follow: (1) discloses unfavorable financial condition that management may want to avoid; (2) serves as a final check on the mathematical accuracy of all other budgets; and (3) highlights future resources and obligations.

PROJECTED (BUDGETED) INCOME STATEMENT a summary of various component projections of revenues and expenses for the budget period. It indicates the expected net income for the period.

PROGRAM EVALUATION AND REVIEW TECHNIQUE (PERT) a useful management tool for planning, coordinating, and controlling large complex projects such as formulation of a master budget, construction of buildings, installation of computers, and scheduling the closing of books.

PROGRAM-PLANNING-BUDGETING SYSTEM (PPBS) a planning-oriented approach to developing a program budget. A program budget is a budget wherein expenditures are based primarily on programs of work and secondarily on character and object. It is a transitional type of budget between the traditional character and object budget, on the one hand, and the performance budget on the other. The major contribution of PPBS lies in the planning process, i.e., the process of making program policy decisions that lead to a specific budget and specific multi-year plans.

RESPONSIBILITY ACCOUNTING the collection, summarization, and reporting of financial information about various decision centers (responsibility centers) throughout an organization.

RESPONSIBILITY CENTER a unit in the organization which has control over costs, revenues, or investment funds. For accounting purposes,
responsibility centers are classified as cost centers, revenue centers, profit centers, and investment centers, depending on what each center is responsible for.

SALES FORECASTING a projection or prediction of future sales. It is the foundation for the quantification of the entire business plan and a master budget. Sales forecasts serve as a basis for planning. They are the basis for capacity planning, budgeting, production and inventory planning, manpower planning, and purchasing planning.

SALES BUDGET an operating plan for a period expressed in terms of sales volume and selling prices for each class of product or service. Preparation of a sales budget is the starting point in budgeting since sales volume influences nearly all other items.

SALES FORECASTING a projection or prediction of future sales. It is the foundation for the quantification of the entire business plan and a master budget. Sales forecasts serve as a basis for planning.

SIMULATION MODELS "what-if" models that attempt to simulate the effects of alternative management policies and assumptions about the firm's external environment. They are basically a tool for management's laboratory.

STANDARD a quantitative expression of a performance objective, such as standard hours of labor allowed for actual production or a standard purchase price of materials per unit. Sometimes the terms standard and budget are used interchangeably.

STANDARD COST SYSTEM a system by which production activities are recorded at standard costs and variances from actual costs are isolated.

STANDARD COSTS production or operating costs that are carefully predetermined. A standard cost is a target cost that should be attained.

STANDARD HOURS ALLOWED the standard time that should have been used to manufacture actual units of output during a period. It is obtained by multiplying actual units of production by the standard labor time.

STANDARD LABOR RATE the standard rate for direct labor that would include not only base wages earned but also an allowance for fringe
benefits and other labor-related costs.

STANDARD MATERIALS PRICE the standard price per unit for direct materials. It reflects the final, delivered cost of the materials, net of any discounts taken.

STANDARD QUANTITY ALLOWED the standard amount of materials that should have been used to manufacture units of output during a period. It is obtained by multiplying actual units of production by the standard material quantity per unit.

STATIC (FIXED) BUDGET a budget based on one level of activity (e.g., one particular volume of sales or production).

STRATEGIC PLANNING the implementation of an organization's objectives. Strategic planning decisions will have long-term impacts on the organization while operational decisions are day-to-day in nature.

VARIABLE OVERHEAD EFFICIENCY VARIANCE the difference in actual and
budgeted variable overhead costs that are incurred due to inefficient use of indirect materials and indirect labor.

VARIABLE OVERHEAD SPENDING VARIANCE the difference in actual and
budgeted variable overhead costs that result from price changes in indirect materials and indirect labor and insufficient control of costs of specific overhead items.

VARIANCE the difference of revenues, costs, and profit from the planned amounts. One of the most important phases of responsibility accounting is establishing standards in costs, revenues, and

profit and establishing performance by comparing actual amounts with the standard amounts. The differences (variances) are calculated for each responsibility center, analyzed, and unfavorable variances are investigated for possible remedial action. See also Variance Analysis.

WHAT-IF ANALYSIS see Simulation.

ZERO-BASE BUDGETING a planning and budgeting tool that uses cost/benefit analysis of projects and functions to improve resource allocation in an organization. Traditional budgeting tends to concentrate on the incremental change from the previous year. It assumes that the previous year's activities and programs are essential and must be continued. Under zero-base budgeting, however, cost and benefit estimates are built up from scratch, from the zero level, and must be justified.