UNIT I: MASTER BUDGET

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1.0. INTRODUCTION

The purpose of this chapter is to introduce the master budget or financial plan. This topic includes an important set of concepts and techniques that represent the major planning device for an organization, as well as the foundation for a traditional standard cost performance evaluation and control system. The chapter includes six sections. The first section provides a discussion of the underlying concepts of financial planning and budgeting including the various types of budgets. This section also includes a diagram of the master budget that provides an overview of the overall budgeting process. Sections two and three include short, but important discussions of the purposes and benefits of budgeting and the limitations and problems involved in budgeting. The assumptions upon which the budget is based are briefly described in section four. The techniques used to prepare a master budget are discussed and illustrated in section five. This is the longest section and includes a discussion of where the

budget director obtains the budget information as well as how the information is used to complete the various schedules and sub-budgets involved. The last section includes a simplified, but fairly comprehensive example.

1.1. LEARNING OBJECTIVES

After you have read and studied this chapter, you should be able to:

- ✓ Discuss the concept of financial performance including the elements involved
- ✓ Outline the main parts of a master budget including the sequence in which they are developed.
- ✓ Discuss the purposes and benefits of the master budget.
- ✓ Discuss the limitations and problems associated with the master budget.
- ✓ Briefly describe the assumptions underlying the master budget.
- ✓ Discuss the sources of the various information needed for the master budget.
- ✓ Prepare the operating budget and supporting schedules
- ✓ Prepare a financial budget

1.2. BUDGETING CONCEPTS

Budgeting involves planning for the various revenue producing and cost generating activities of an organization. The importance of budgeting is emphasized by an old saying, "Failing to plan, is like planning to fail." Budgeting is essentially financial planning, or planning for financial performance. Financial performance depends on revenue and cost. Revenue is provided from sales of merchandise by

retailers, sales of products, harvested, mined, constructed, formed, processed or assembled by farms, mining companies, construction companies and manufacturers and from sales of various services by firms involved in activities such as banking, insurance, accounting, law, medical care, food distribution, repair and entertainment. In addition to producing revenue, all of these companies generate three types of costs including discretionary, engineered and committed costs. Various costs fall into one of these three categories based on the cause and effect relationships involved. Although there are a variety of ways to define costs, categorizing costs in terms of the cause and effect relationships is a prerequisite for understanding the different types of budgets that are introduced in this chapter. These three cost concepts are summarized and discussed in more detail below.

TYPE OF COST	CAUSE & EFFECT OR COST BENEFIT RELATIONSHIP	COST BEHAVIOR	EXAMPLES
Discretionary	**Relationships are difficult or impossible to define**	**Fixed, Variable, and mixed in the short term**	**Cost administrative and support services such as employee training, advertising, sales promotion, legal advice, and research and maintenance**
Engineered	**Relationships are relatively easy to define**	**Variable in the short run**	**Direct resources used in production activities such as material and direct labor and many indirect resources such as electric power**

Committed	**Relationships can be estimated but not defined precisely**	**Fixed in the short run**	**Cost of establishing and maintaining the readiness to conduct business, such as the cost associated with plant and equipment**

1.2.1. Discretionary Costs

Many activities are viewed as beneficial to an organization, even thought the benefits obtained, or value added by performing the activities cannot be defined precisely, either before or after the activity is completed. The costs of the inputs, or resources required to perform such activities are referred to as discretionary costs. These costs are discretionary in the sense that management must choose the desired level of the activity based on intuition or experience because there is no well-defined cause and effect relationship between cost and benefits. Discretionary costs are usually generated by service or support activities. Examples include employee training, advertising, sales promotion, legal advice, preventive maintenance, and research and development. The value added by each of these activities is intangible and difficult, if not impossible to measure, where value added refers to the benefits obtained by either internal or external customers. In terms of cost behavior, discretionary costs may be fixed, variable or mixed.

1.2.2. Engineered Costs

Engineered costs result from activities with reasonably well defined cause and effect relationships between inputs and outputs and costs and benefits. Direct material costs provide a good example. Engineers can specify precisely how many parts (inputs) are required to generate a specific output such as a microcomputer, a coffee maker, an automobile, or a television set. Direct labor also falls into the

engineered cost category as well as indirect resources that vary with product specifications and production volume. Although the cause and effect relationships are not as precise for indirect resources, these relationships can be established using statistical techniques such as regression and correlation analysis. A key difference between discretionary costs and engineered costs is that the value added by the activities associated with engineered costs is relatively easy to measure. Engineered costs are variable in terms of cost behavior.

1.2.3. Committed Costs

Committed costs refer to the costs associated with establishing and maintaining the readiness to conduct business. The benefits obtained from these expenditures are represented by the company's infrastructure. For example, the costs associated with the purchase of a franchise, a patent, drilling rights and plant and equipment create long-term obligations that fall into the committed cost category. These costs are mainly fixed in terms of cost behavior and expire to become expenses in the form of amortization and depreciation.

1.3. TYPES OF BUDGETS

Four types of budgets are used for planning and controlling the various types of costs discussed above. These four techniques are summarized in ----------

BUDGET TYPES AND CHARACTERISTICS

TYPE OF BUDGET	CHARACTERISTICS OF THE TECHNIQUE	TYPE OF COST OR EXPENDITURE	EXAMPLES
APPROPRIATION BUDGET	A maximum amount is established for certain expenditures based on management judgment	Discretionary costs	Employee training, advertising, sales promotion and research and development.
FLEXIBLE BUDGET	A static amount (a) is established for fixed costs and a variable rate (b) is determined per activity measure for variable costs, i.e., Y = a + bX	The static amount (a) includes both discretionary and committed costs while the flexible part (b) includes engineered costs per X value.	The static part: salaries, depreciation, property taxes and planned maintenance. The flexible part: direct material, direct labor and variable overhead. Also, some costs related to sales reps such as sales commissions and travel.
CAPITAL BUDGET	Decisions concerning potential investments are made using discounted cash flow techniques.	Committed costs	New plant and equipment

MASTER BUDGET	A comprehensive plan is developed for all revenue and expenditures.	Discretionary, engineered and committed costs.	All revenue and expenditures for any company.

1.3.1. Appropriation Budgets

The oldest type of budget is referred to as an appropriation budget. Appropriation budgets place a maximum limit on certain discretionary expenditures and may be either incremental, priority incremental, or zero based. Incremental budgets are essentially last year's budget amount plus an increment, i.e., small increase. Priority incremental budgets also involve an increase, but require managers to prioritize, or rank discretionary activities in terms of their importance to the organization. The idea is for the manager to indicate which activities would be changed if the budget were increased or decreased. The technique is expensive to use because zero based budgets theoretically require justification for the entire budget amount. When it was popular, a more typical approach was to justify the last twenty percent of the budget, i.e., use eighty percent based budgeting.

From a control perspective, appropriation budgets are effective in limiting the amount of expenditure, but create a behavioral bias to spend to the limit. Establishing a maximum amount for expenditure encourages spending to the limit because spending below the limit implies that something less than the maximum appropriation was needed. Spending below the limit might result in a budget cut in future periods. Since nearly every manager views a budget reduction in their discretionary costs as undesirable, there are frequently crash efforts at the end of a budget period to spend up to the limit.

1.3.2. Flexible Budgets

Flexible budgets are based on a cost function such as $Y = a + bX$, where Y represents the budgeted cost, or dependent variable. The

constant "a" represents a static amount for fixed costs and the constant "b" represents the rate of change in Y expected for a unit change in the independent variable X. The expression " bX" is the flexible part of the budget cost function. The flexible budget technique is used for planning and monitoring all types of costs. The static amount "a" includes both discretionary and committed costs, while the flexible part "bX" includes various types of engineered costs. The flexible characteristic of the technique enables the flexible budget to play a key role in both financial planning and performance evaluation.

1.3.3. Capital Budgets

Capital budgets represent the major planning device for new investments. Discounted cash flow techniques such as net present value and the internal rate of return are used to evaluate potential investments. Capital budgets are part of a somewhat more encapsulating concept referred to as investment management. Investment management involves the planning and decision process for the acquisition and utilization of all of the organization's resources, including human resources as well as technology, equipment and facilities. The concept of investment management includes the discounted cash flow methods, but is more comprehensive in that the organization's portfolio of interrelated investments is considered as well as the projected effects of not investing.

1.3.4. Master Budgets

The fourth type of budget is referred to as the master budget or financial plan. The master budget is the primary financial planning mechanism for an organization and also provides the foundation for a traditional financial control system. More specifically, it is a comprehensive integrated financial plan developed for a specific period of time, e.g., for a month, quarter, or year. This is a much broader concept than the first three types of budgeting. The master

budget includes many appropriation budgets (typically in the administrative and service areas) as well as flexible budgets, a capital budget and much more. A diagram illustrating the various parts of a master budget is presented in ----------

DIAGRAM OF MASTER BUDGET OF A NON MANUFACTURING COMPANY

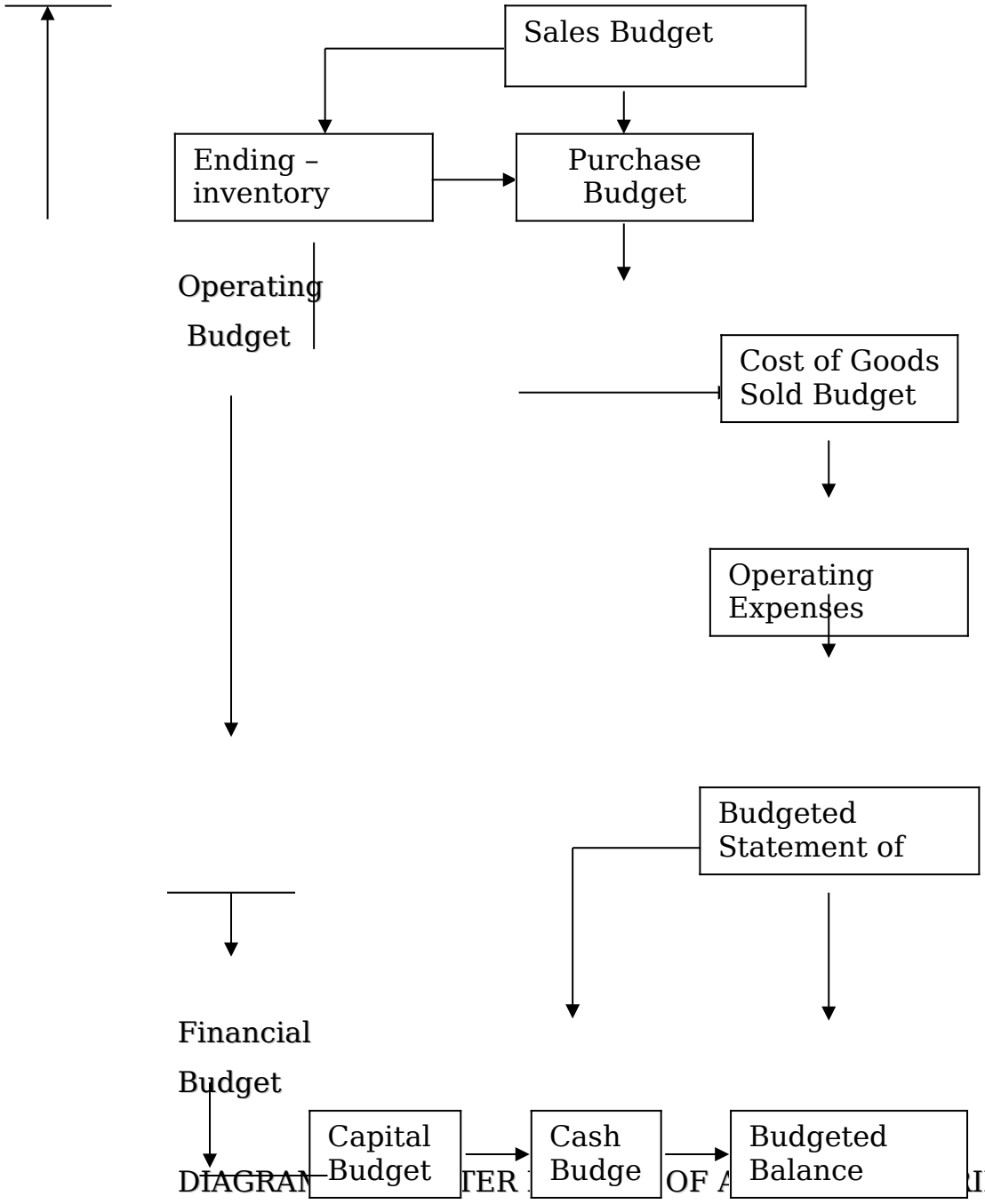
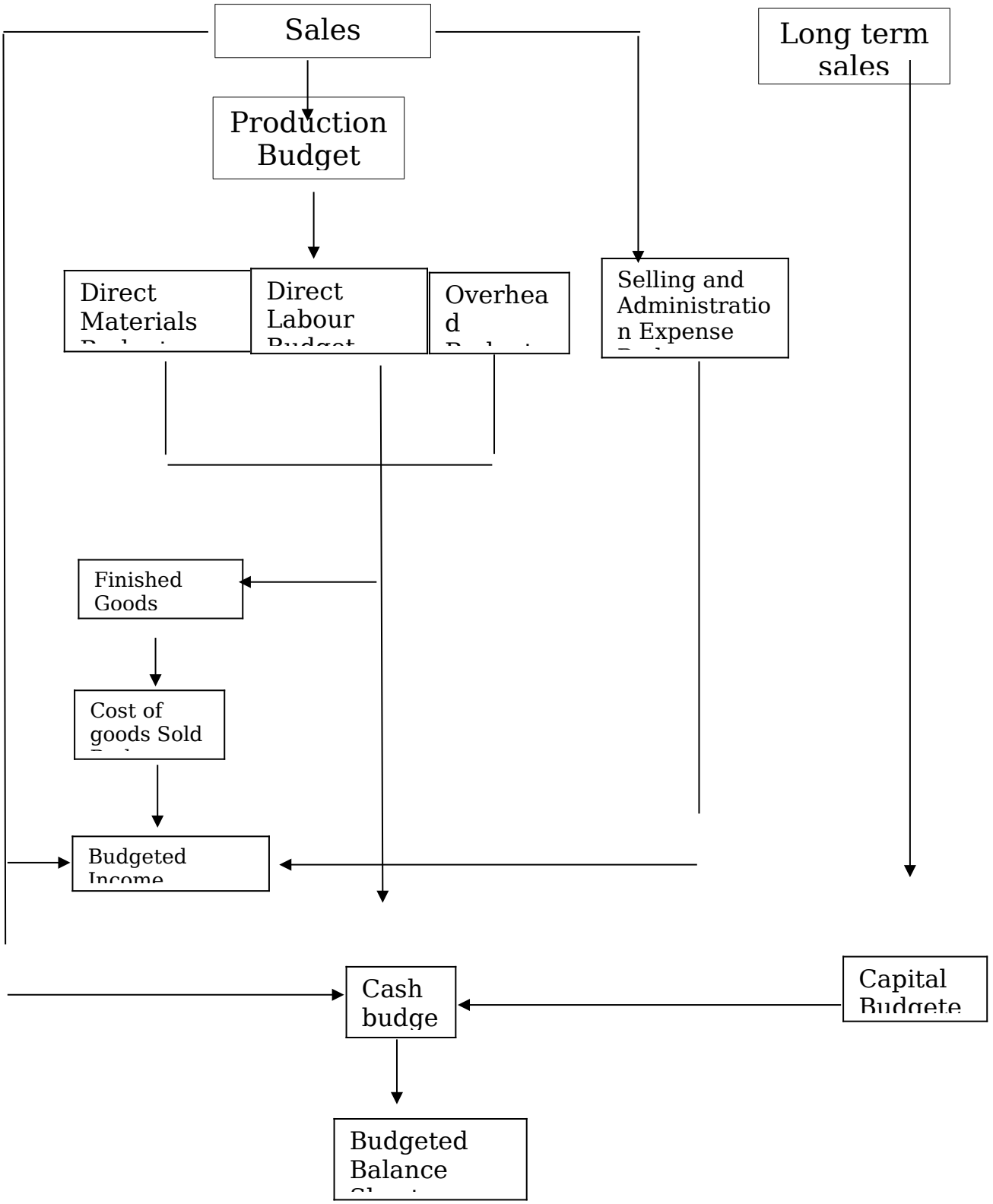


DIAGRAM OF MASTER BUDGET OF A NON MANUFACTURING COMPANY


Sales
Long term sales
Production Budget
Direct Materials
Direct Labour
Overhead
Selling and Administration Expense
Finished Goods
Cost of goods Sold
Budgeted Income
Cash budge
Capital Budgete
Budgeted Balance

The master budget has two major parts including the operating budget and the financial budget. The operating budget begins with the sales budget and ends with the budgeted income statement. The financial budget includes the capital budget as well as a cash budget, and a budgeted balance sheet. The main focus of this chapter is on the various parts of the operating budget and the cash budget. The budgeted balance sheet is covered briefly, but not emphasized. In the next section, we consider the purposes, benefits, limitations and assumptions of the master budget.

1.4. THE PURPOSES AND BENEFITS OF THE MASTER BUDGET

There are a variety of purposes and benefits obtained from budgeting. Consider the following:

a. Periodic Planning (Formalization of Planning).

The most obvious purpose of a budget is to quantify a plan of action. The development of a quarterly budget for a Sheraton Hotel, for example, forces the hotel manager, the reservation manager, and the food and beverage manager to plan for the staffing and supplies needed to meet anticipated demand for the hotel's services. Thus, budgets forces managers to think a head to anticipate and prepare for the changing conditions. The budgeting process makes planning an explicit management responsibility.

b. Integrates and Coordinates

The master budget is the major planning device for an organization. Thus, it is used to integrate and coordinate the activities of the various functional areas within the organization. For example, a comprehensive plan helps ensure that all the needed inputs (equipment, materials, labor, supplies, etc.) will be at the right place at the right time when needed, just-in-time if possible. It also helps insure

that manufacturing is planning to produce the same mix of products that marketing is planning to sell.

c. Communicates and Motivates

Another purpose and benefit of the master budget is to provide a communication device through which the company's employees in each functional area can see how their efforts contribute to the overall goals of the organization. This communication tends to be good for morale and enhance jobs satisfaction. People need to know how their efforts add value to the organization and its' products and services. The behavioral aspects of budgeting are extremely important.

c. Promotes Continuous Improvement

The planning process encourages management to consider alternatives that might improve customer value and reduce costs.. The financial plan and subsequent financial performance measurements reflect the financial expectations and consequences of those efforts.

d. Guides Performance

The master budget also provides a guide for accomplishing the objectives included in the plan. The budget becomes the basis for the acquisition and utilization of the various resources needed to implement the plan. Perfection of the guidance aspect of budgeting can significantly reduce the amount of uncertainty and variability in the company's operations.

e. Facilitates Evaluation and Control

The master budget provides a method for evaluating and subsequently controlling performance. We will develop this idea in considerable detail in the following chapter. Performance evaluation and control is a very powerful and very controversial aspect of budgeting.

f. Cost Awareness.

Accountants and financial managers are concerned daily about the cost implications of decisions and activities, but many other managers are not. Production managers focus on input, marketing manager's focuses on sales, and so forth. It is easy for people to overlook costs and cost-benefit relationships. At budgeting time, however, all managers with budget responsibility must convert their plans for projects and activities to costs and benefits. This cost awareness provides a common ground for communication among the various functional areas of the organization.

1.5. LIMITATIONS AND PROBLEMS

There are several limitations and problems associated with the master budget that need to be considered by management. These problems involve uncertainty, behavioral bias and costs.

a. Uncertainty

Budgeting includes a considerable amount of forecasting and this activity involves a considerable amount of uncertainty. Uncertainty affects both sides of the financial performance dichotomy, but uncertainty on the revenue side presents a more serious limitation for planning. The sales budget is frequently based on a forecast supported by a variety of assumptions about the economy, and the actions of competitors, suppliers, and customers. The uncertainty associated with sales forecasting creates a greater problem than uncertainty on the cost side because the other parts of the budget are derived from the sales forecast.

b. Costs

A third problem or limitation is that budgeting requires a considerable amount of time and effort. Many companies maintain a twelve-month budget on a continuous basis by adding a future month as the current month expires. While this does not create a major expenditure for large or medium sized organizations, smaller companies may find it difficult to justify the costs involved. Many small, potentially profitable firms, do not plan effectively and eventually fail as a result. Cash flow problems are common, e.g., not having enough cash available (or accessible through a line of credit with a bank) to pay for merchandise or raw materials or to meet the payroll. Many of these problems can be avoided by preparing a cash budget on a regular basis.

c. Budgeting And Human Behavior

Budgets can have a significant behavioral effect. Whether that effect is positive or negative depends to large extent on how budgets are used. **Positive behavior** occurs when the goals of individual managers and employees are aligned with the goal of the organization and the manager has the drive to achieve them. The alignment of managerial and organizational goals is often referred to as goal congruence.

If budgets is improperly administered, the may result in **dysfunctional behaviour**, a behavior that is in basic conflict with the goals of the organization. If budgets are to benefit an organization, they need the support all the firm's employees. The behavioral problems include the following: conflicting views, imposed budgets, budgets as checkup devices, and unwise adherence to budgets.

Conflicts. The problem of conflicts in budgeting can be illustrated by considering a matter of importance to almost any firm-inventory policy. The sales manager of a retail firm wants inventory to be as high as possible because it is easier to make sales if the goods are available to the customer immediately. For the same reason, the sales manager in

a manufacturing firm also wants inventory immediately ready for delivery. A financial manager wants low inventories because of the costs associated with having inventory (storage, insurance, taxes, interest, and so on). In a manufacturing firm, the production manager is not interested in inventory per se, but in steady production, no interruptions for rush orders, no unplanned overtime, and other conditions that minimize production costs. Thus, three managers have different view on the desirable level of inventory. They will be evaluated by reference to how well they do their job, so each has an interest in the firm's inventory policy. In a conventional manufacturing environment, the conflict is resolved with great difficulty, if at all and the managerial accountant might be called in to help determine the best inventory level for the firm.

Imposed Budgets. Significant problems can result from the imposition of unachievable budgets. Managers can become discouraged and feel no commitment to meeting budgeted goals. Or perhaps they will take actions that seem to help achieve goals (such as scrimping on preventive maintenance to achieve lower costs in the short run) but are really harmful in the long run (when machinery breaks down and production must be halted altogether).

Budgets as "Checkup" Devices. Behavioral problems do not arise solely because of the procedure followed for developing budget allowances. Comparisons of budgeted and actual result and subsequent evaluation of performance also introduce difficulties. In ideal circumstances managers use actual results to evaluate their own performance, to evaluate the performance of other, and to correct elements of operations that seem to be out of control. The budget serves as a feedback device; it lets managers know the result of their actions. Having seen that something is wrong, they can take steps to correct it.

Unfortunately, budgets are often used more for checking up on manager; that is, the feedback function is ignored. Where this is the case, managers are constantly looking over their shoulders and trying to think of ways to explain unfavorable results. The time spent on thinking of ways to defend the results could be more profitably used to plan and control operations. Some evaluation of performance is necessary, but the budget ought not to be perceived as a club to be held over the heads of managers.

Unwise Adherence to Budgets. As noted earlier, the budgets set limits on cost incurrence, allowances beyond which managers are not expected to go. However, if managers' view budgeted amounts as strict limits on spending, they may spend either too little or too much. For example, there are times when exceeding the budget benefits the firm. Suppose a sales manager believes that a visit to several important customers or potential customers will result in greatly increased sales. The sales manager will be reluctant to authorize the visit if it will result in exceeding the travel budget.

At the other extreme, a manager who has kept costs well under budget might be tempted to spend frivolously so that expenditures will reach the budgeted level. The manager may fear that the budget for the following year will be cut because of the lower costs for the current year, the manager might take an undesirable action-authorize an unnecessary trip-in order to protect personal interests.

1.6. THE ASSUMPTIONS OF THE MASTER BUDGET

Typically, the following simplifying assumptions are made when preparing a master budget:

1.) Sales prices are constant during the budget period,
2.) Variable costs per unit of output are constant during the budget period,

3.) Fixed costs are constant in total and

4.) Sales mix is constant when the company sells more than one product.

These assumptions facilitate the planning process by removing many of the economic complexities.

Learning Activity 1.

1. Identify the basic purposes of budgeting for an organization
   .....
   .....
   .....
2. What is master budget?
   .....
   .....
   .....
3. What dysfunctional behavioral implications will have the budgeting process if it is not well administered?
   .....
   .....
   .....

1.7. PREPARING A MASTER BUDGET

The master budget is the comprehensive financial plan for the organization as a whole; it is made up of a various individual budgets for each part of the organization aggregated into one overall budget for the entire organization.

The two major components of master budget are the operating budget and the financial budget.

1.7.1. The Operating Budget

Preparing an Operating Budget is a sequential process of developing nine sub-budgets. Except for one or two exceptions the sub-budgets must be prepared in the following order: sales, production, direct materials, direct labor, factory overhead, ending inventory, cost of goods sold, selling & administrative and income statement Each part is described below.

1.7.1. 1. Sales Budget

The Sales budget is the starting point in preparing the master budget. As shown earlier, all other items in the master budget, including production, purchase, inventories, and expenses, depend on it in some way. Manufacturing and merchandising companies forecast sales of their goods. Service giving companies, like, hotels forecast the number of rooms that will be occupied during various seasons.

Sales forecasting All companies have two things in common when it comes to forecasting sales of services or goods: Sales forecasting is a critical step in the budgeting process, and it is very difficult to do it accurately. Sales forecasting is the process of predicting sales of services or goods. Various procedures are used in sales forecasting, and the final forecast usually combines information from many different sources. Many firms have a top management level market research staff whose job is to coordinate the company's sales forecasting efforts. Among the major factors considered when forecasting sales are:

1. Past sales levels and trends
2. General economic trends.
3. Economic trends in the company's industry.
4. Other factors expected to affect sales in the industry.
5. Political and legal events.
6. The intended pricing policy of the company.
7. Planned advertising and product promotion.

8. Expected actions of competitors.

Developing a sales budget involves the following calculations

Budgeted Sales $ = (Budgeted Unit Sales)(Budgeted Sales Prices)

Current Period Cash Collections = Current Period Cash Sales + Current Period Credit Sales Collected in Current Period + Prior Period Credit Sales Collected in Current Period

These calculations are relatively simple, but where does the budget director obtain this information? Well, sales forecasting is a marketing function. Sales estimates are frequently generated by the company's sales representatives who discuss future needs with customers (wholesalers and retailers). Statistical forecasting techniques can also be used to make estimates of expected future sales, considering the company's previous sales performance and various assumptions about the future economic climate, and the actions of competitors and consumers. Pricing is also a marketing function, but many prices are based on costs plus a markup (the supply function) and consideration of what consumers are willing and able to pay for the product (the demand function).

The information needed to develop an equation for collections is provided by the finance department and is normally based on past experience. These calculations are somewhat more involved than they appear to be in the equation above because of the effects of cash discounts and the time lags between credit sales and collections. Cash discounts are frequently used to speed up cash inflows. This puts the funds back to work sooner and reduces the need for short term loans. However, even with a generous cash discount for prompt payment, collections for credit sales are typically spread out over several months.

1.7.1.2. Production Budget

Preparing a production budget includes consideration of the desired inventory change as follows:

Units To Be Produced = Budgeted Unit Sales + Desired Ending Finished Goods - Beginning Finished Goods

The desired ending inventory is usually based on the next period's sales budget. Considerations involve the time required to produce the product, (i.e., cycle time or lead time) as well as setup costs and carrying costs. In a just-in-time environment the desired ending inventory is relatively small, or theoretically zero in a perfect situation. In the examples and problems in this chapter, the ending finished goods inventory is stated as a percentage of the next period's (month's) unit sales.

1.7.1.3. Direct Material Budget

The direct materials budget includes five separate calculations.

a. Quantity of Material Needed for Production
= (Units to be Produced)(Quantity of Material Budgeted per Unit)

The quantity of material required per unit of product is determined by the industrial engineers who designed the product. Materials requirements are frequently described in an engineering document referred to as a "bill of materials".

b. Quantity of Material to be purchased

= Quantity of Material Needed for Production + Desired Ending Material - Beginning Material

This calculation is more involved than equation 3b appears to indicate because it includes information for two future periods. The desired ending materials quantity is normally based on the next period's

(month's) materials needed for production and this amount depends on the third period's budgeted unit sales. Of course inventories of raw materials (just like finished goods) are kept to a minimum in a JIT environment. Factors that influence the desired inventory levels include the reliability of the company's suppliers, as well as ordering and carrying costs.

c. Budgeted Cost of Material Purchases

= (Quantity of Material to be Purchased)(Budgeted Material Prices)

This amount is needed to determine cash payments. Once the quantity to be purchased has been determined, the cost of purchases is easily calculated. Budgeted material prices are provided by the purchasing department.

d. Cost of Material Used

= (Quantity needed for Production)(Budgeted Material Prices)

The cost of materials used is needed in the cost of goods sold budget below.

e. Cash Payments for Direct Material Purchases

= Current Period Purchases Paid in Current Period + Prior Period Purchases Paid in Current Period

The information needed to determine budgeted cash payments is provided by accounting, (accounts payable) and is usually based on past experience. Normally the budget should reflect a situation where the company pays promptly to take advantage of all cash discounts allowed, thus 3e may be equal to 3c.

1.7.1.4. Direct Labor Budget

Fewer calculations are needed for direct labor than for direct materials because labor hours cannot be stored in the inventory for future use. Time can be wasted, but not postponed.

a. Direct Labor Hours Needed For Production

= (Units to be Produced)(D.L. Hours Budgeted per Unit)

The amount of direct labor time needed per unit of product is determined by industrial engineers. Estimates are frequently made using a technique referred to as motion and time study. This involves measuring each movement required to perform a task and then assigning a precise amount of time allowed for these movements. The cumulative time measurements for the various tasks required to produce a product provide the estimate of a standard time per unit.

b. Budgeted Direct Labor Cost

= (D.L. Hours needed for Production)(Budgeted Rates Per Hour)

The budgeted rates per hour for direct labor are provided by the human resource department. Frequently the labor (union) contract provides the source for this information.

1.7.1.5. Factory Overhead Budget

The factory overhead budget is based on a flexible budget calculation. More specifically, the calculation is as follows:

a. Budgeted Factory Overhead Costs

= Budgeted Fixed Overhead + (Budgeted Variable Overhead Rate)(D.L. Hours needed for Production from 4a)

The calculation for cash payments reflects one of the differences between cash flows and accrual accounting. Since some costs, like depreciation, do not involve cash payments in the current period, these costs must be subtracted from the total overhead costs to determine the appropriate amount.

b. Cash Payments for Overhead

= Budgeted Factory Overhead Cost - Depreciation and other costs that do not require cash payments

Multiplying the total overhead rate by the number of direct labor hours needed for production provides the standard or applied overhead costs.

1.7.1.6. Ending Inventory Budget

The dollar amount for the ending inventory of finished goods is needed below to determine cost of goods sold. The dollar amounts for ending direct materials and finished goods are needed for the balance sheet.

a. Ending Direct Materials

= (Desired Ending Materials from 3b)(Budgeted Prices)

b. Ending Finished Goods

= (Desired Ending Finished Goods)(Budgeted Unit Cost)

1.7.1.7. Cost Of Goods Sold Budget

Cost of goods sold is needed for the income statement. One method of determining budgeted COGS involves accumulating the amounts from the previous sub-budgets as follows.

a. Budgeted Total Manufacturing Cost

= Cost of Direct Material Used (from 3d.) + Cost of Direct Labor Used (from 4b.)

+ Total Factory Overhead Costs (from 5a.)

b. **Budgeted Cost of Goods Sold**

= Budgeted Total Manufacturing Cost (from 7a.)

+ Beginning Finished Goods (from previous ending or calculate from 2 and 6b)

- Ending Finished Goods (from 6c or calculate from 2 and 6b)

This is the same approach used in Chapter 2 to determine cost of goods sold, but when developing a budget we typically assume no change in Work in Process. Therefore, budgeted cost of goods manufactured is equal to budgeted cost of goods sold.

1.7.1.8. Selling & Administrative Expense Budget

The preparation of the selling and administrative expense budgets is very similar to the approach used for factory overhead.

a. Budgeted Selling and Administrative Expenses

= Budgeted Fixed Selling & Administrative Expenses + (Budgeted Variable Rate as a Proportion of Sales $)(Budgeted Sales $)

c. Cash Payments for Selling & Administrative Expenses

= Budgeted Selling & Administrative Expenses - Depreciation and other cost which do not require cash payments

1.7.1.9. Budgeted Income Statement

Preparing the budgeted income statement involves combining the relevant amounts from the sales, cost of goods sold and selling & administrative expense budgets and then subtracting interest, bad debts and income taxes to obtain budgeted net income. In a comprehensive practice problem, the applicable amount for interest expense may need to be calculated from information associated with the cash budget. Bad debt expense is based on the expected proportion of uncollectible stated in the information related to cash collections.

a. Budgeted Sales $ - Budgeted Cost of Goods Sold

= Budgeted Gross Profit

b. Budgeted Gross Profit - Budgeted Selling & Administrative Expenses

= Operating Income

c. Operating Income - Interest Expense - Bad Debts Expense

= Net Income Before Taxes

d. Net Income Before Taxes - Income Taxes

= Net Income After Taxes

1.7.2. The Financial Budget

The financial budget includes the cash budget, the capital budget and the budgeted balance sheet. The cash budget and budgeted balance sheet are discussed below.

1.7.2.1. Cash Budget

a. Budgeted Cash Available

= Beginning Cash Balance + Budgeted Cash Collections from 1

b. Budgeted Cash Excess or Deficiency

= Budgeted Cash Available - Budgeted Cash Payments

c. Ending Cash Balance

= Cash Excess or Deficiency + Borrowings - Repayments including Interest

1.7.2.2. Budgeted Balance Sheet

Preparing the budgeted balance sheet involves accumulating information from the previous period's balance sheet, the various operating sub-budgets, the cash budget and other accounting records.

ASSETS

a. Current Assets:

Cash (from the cash budget - c)

Accounts Receivable (from the sales budget and previous balance sheet)

Direct materials (from the ending inventory budget-a)

Finished goods (from the ending inventory budget -c)

b. Long Term Assets:

Land (from previous balance sheet and budgeted activity)

Buildings (from previous balance sheet and budgeted activity)

Equipment (from previous balance sheet and budgeted activity)

Accumulated depreciation (from the accounting records)

Total Assets

LIABILITIES

c. Current Liabilities:

Accounts Payable (from various operating sub-budgets)

Taxes Payable (from income statement)

d. Long term Liabilities

Total Liabilities

SHAREHOLDERS EQUITY

e. Common Stock (from previous balance sheet and budgeted activity)

f. Retained Earnings (from previous balance sheet and income statement)

Total Shareholders' Equity

Total Liabilities and Shareholders' Equity

EXAMPLES AND PRACTICE PROBLEMS

The following examples and end of chapter practice problems will help you become familiar with the master budget concepts and techniques. The examples and practice problems are simplified to facilitate the learning process. The first example below and most of the practice problems assume that only one period is involved and that only one product is produced from a single direct material. Of course these assumptions are not realistic, but they allow us to prepare budgets by hand in a timely manner to develop an understanding of the budgeting process.

PREPARATION OF MASTER BUDGET (Merchandising Company)

EXAMPLE 1. YZ Company's newly hired accountant has persuaded management to prepare a master budget to aid financial and operating decisions. The planning horizon is only three months, January to March. Sales in December (20x3) were Br. 40, 000. Monthly sales for the first four months of the next year (20x4) are forecasted as follows:

January	Br. 50, 000
February	80, 000
March	60, 000
April	50, 000

Normally 60% of sales are on cash and the remainders are credit sales. All credit sales are collected in the month following the sales. Uncollectible accounts are negligible and are to be ignored.

Because deliveries from suppliers and customer demand are uncertain, at the end of any month Blue Nile wants to have a basic inventory of Br. 20, 000 plus 80% of the expected cost of goods to be sold in the following month. The cost of merchandise sold averages 70%of sales. The purchase terms available to the company are net 30 days. Each month's purchase are paid as follows:

50% during the month of purchase and,

50% during the month following the purchases.

Monthly expenses are:

Wages and commissions……Br. 2, 500 + 15%of sales, paid as incurred.

Rent expense…… Br. 2, 000 paid as incurred.

Insurance expense……Br.200 expiration per month.

Depreciation including truck…… Br.500 per month

Miscellaneous expense……5% of sales, paid as incurred.

In January, a used truck will be purchased for Br. 3, 000 cash. The company wants a minimum cash balance of Br. 10, 000 at the end of each month. Blue Nile can borrow cash or repay loans in multiples of Br. 1, 000. Management plans to borrow cash more than necessary and to repay as promptly as possible. Assume that the borrowing takes place at the beginning, and repayment at the end of the months in question. Interest is paid when the related loan is repaid. The interest rate is 18% per annum. The closing balance sheet for the fiscal year just ended at December 31, 20x3,is:

YZ Company

Balance Sheet

December 31, 20x3

ASSETS

Current assets:

Cash	Br. 10, 000		
Account receivable		16,000	
Merchandise inventory		48, 000	
Unexpired insurance			1,800
Br.75, 800			

Plant assets:

Equipment, fixture and other	Br.37, 000		
Accumulated depreciation		12, 800	Br.24, 200

Total assets Br.100,000

LIABILITIES AND OWNERS' EQUITY

Liabilities:

Accounts payable	Br.16, 800		
Accrued wages and commissions payable		4, 250	Br.21, 050

Capital:

Owners' equity			78, 950

Total liabilities and owners' equity Br.100, 000

Instructions:

1) Using the data given above, prepare the following detailed schedules for the first quarter of the year:

1) Sales budget
2) Cash collection budget
3) Purchase budget
4) Disbursement for purchases
5) Operating expenses budget
6) Disbursement for operating expenses

2) Using the budget data given above and the schedules you have prepared, construct the following pro forma financial statements

a. Income statement for the first quarter of the year.
b. Cash budget including receipts, payments, and effect of financing
c. Balance sheet at March 31, 20x3.

STEPS IN PREPARATION OF MASTER BUDGET

1. a) Sales budget

	December*	January	February	March	Jan.-Mar. Total
Cash sales (40%)	Br.24,000	Br.30,000	Br.48,000	Br.36,000	Br.114,000
Credit sales (60%)	16,000	20,000	32,000	24,000	76,000
Totals	Br.40,000	Br.50,000	Br.80,000	Br.60,000	Br.190,000

*December sales are included in the schedule (a) because they affect cash collected in January.

b) Cash collection budget

	January	February	March
Cash sales of the month	Br.30,000	Br.48,000	Br.36,000
Credit sales of last month	16,000	20,000	32,000

Total cash collected	Br.46, 000	Br.68, 000	Br.68, 000

c). Purchase budget

	January	February	March	Jan.-Mar
Required ending inventory	Br.64, 800	Br.53, 600	Br.48, 000	
Cost of gods sold	35, 000	56, 000	42, 000	Br.133, 000
Total needed	Br.99, 800	Br.109, 600	Br.90, 000	
Beginning inventory	48, 000	64, 800	53, 600	
Purchases budget	Br.51, 800	Br.44, 800	Br.36, 400	

d). Disbursement for purchases

	January	Februar y	March
50% of last month's purchase	Br.16, 800	Br.25, 900	Br.22, 400
50% of current month's purchase	25, 900	22, 400	18, 200
Total disbursement for purchase	Br.42, 700	Br.48, 300	Br.40, 600

e). Operating expense budget

	January	February	March	Jan.- Mar.
Wages and commissions	Br.10, 000	Br.14, 500	Br.11, 500	Br.36, 000

Rent expense	2, 000	2, 000	2, 000	6, 000
Insurance expense	200	200	200	600
Depreciation expense	500	500	500	1, 500
Miscellaneous expense	2, 500	4, 000	3, 000	9, 500
Total	Br.15, 200	Br.21, 200	Br.17, 200	Br.53, 600

f). Disbursement for operating expenses budget

	January	February	March
Wages and commissions	Br.14, 250	Br.14, 500	Br.11, 500
Rent expense	2, 000	2, 000	2, 000
Miscellaneous expense	2, 500	4, 000	3, 000
Total	Br.18, 750	Br.20, 500	Br.16, 500

g) Budget income statement

YZ Company **Budget Income Statement** **For the Quarter Ended, March 31, 20x3**		
Sales (**schedule 1(a)**)		Br.190, 000
Cost of goods sold (**schedule 1(c)**)		133,000
Gross profit		57,000
Operating expenses		
Wages and commissions	Br.36, 000	
Rent expense	6, 000	
Insurance expense	600	
Depreciation expense	1,500	
Miscellaneous expense	9, 500	53, 600
Operating income		3, 400
Interest expense*		885

Net income		2, 515

*__Interest expense computation__

Paid interest = 11, 000*0.18 * 3/12= 495

Accrued amount:

On the first batch borrowing:

8, 000 * 0.18* 3/12= 360

On the second batch borrowing:

1, 000 * 0.18 * 2/12= 30

Total interest expense incurred Br.885

b) Cash budget including receipts, payments and effects of financing

	January	February	March
Beginning balance	Br.10, 000	Br.10, 550	Br.10, 750
Collections (**Schedule1 (b)**)	46, 000	68, 000	68, 000
Cash available for the use (**x**)	Br.56, 000	Br.78, 550	Br.78, 750
Cash disbursements for:			
Purchases (**Schedule 1(d)**)	42, 700	48, 300	40, 600
Operating expenses (**Schedule1 (f)**)	18, 750	20, 500	16, 500
Truck purchases	3, 000	-	-
Total disbursement (**y**)	Br.64, 450	Br.68, 800	Br.57, 100
Minimum cash balance required	10, 000	10, 000	10, 000
Total cash needed	Br.74, 450	Br.78, 800	Br.67, 100
Cash excess (deficiency)	Br.(18, 450)	Br. (250)	Br.11, 650
Effects of financing			

Borrowing	19, 000	1, 000	-
Payment of the principal	-	-	(11, 000)
Payment of interest	-	-	(495)
Net effect of financing (**z**)	Br.19, 000	Br.1, 000	Br.(11, 495)

c) Budgeted balance sheet

YZ Company

Budgeted Balance Sheet

March 31, 20x3

ASSETS

Current assets		
Cash	Br. 10, 155	
Accounts receivable	24, 000	
Merchandise inventory	48, 000	
Unexpired insurance	1, 200	Br. 83, 355
Plant assets		
Equipment, Fixture and others	40, 000	
Accumulated depreciation	14, 300	25, 700
Total assets		**Br. 109, 055**

LIABILITIES AND OWNER'S EQUITY

Liabilities		
Accounts payable	Br.18, 200	
Loan payable	9, 000	
Interest payable	390	
Total liabilities		Br.27, 590
Capital		
Beginning owners' equity	Br.78, 950	
Net income	2, 515	
Ending capital balance		81, 465
Total equities		
Br.109, 055		

PREPARATION OF MASTER BUDGET (Manufacturing Company)

Example (2) Great Company manufactures and sells a product whose peak sales occur in the third quarter. Management is now preparing detailed budgets for 20x4- the coming year and has assembled the following information to assist in the budget preparation:

The company's product selling price is Br. 20 per unit. The marketing department has estimated sales in units as follows for the next six quarters.

	20x4 Quarters	**20x5 Quarters**
Quarter 1	10000	15000
Quarter 2	30000	15000
Quarter 3	40000	
Quarter 4	20000	

Sales are collected in the following pattern: 70% of sales are collected in the quarter in which the sales are made and the remaining 30% are collected in the following quarter. On January1, 20x4, the company's balance sheet showed Br.90, 000 in account receivable, all of which will be collected in the first quarter of the year. Bad debts are negligible and can be ignored.

The company maintains an ending inventory of finished units equal to 20% of the next quarter's sales. The requirement was met on December 31, 20x3, in that the company had 2, 000 units on hand to start the new year.

Fifteen pounds of raw materials are needed to complete one unit of product. The company requires an ending inventory of raw materials on hand at the end of each quarter equal to 10% of the following quarter's production needs of raw materials. This requirement was met on December 31, 20x3 in that the company had 21, 000 pounds of raw materials to start the New Year.

The raw material costs Br.0.20 per pound. Raw material purchases are paid for in the following pattern: 50% paid in the quarter the purchases are made, and the remainder is paid in the following quarter. On January 1,20x4, the company's balance sheet showed Br.25, 800 in accounts payable for raw material purchases, all of which be paid for in the first quarter of the year.

Each unit of Great's product requires 0.8 hour of labor time. Estimated direct labor cost per hour is Br.7.50.

Variable overhead is allocated to production using labor hours as the allocation base as follows:

Indirect materials	Br.0.40
Indirect labor	0.75
Fringe benefits	0.25
Payroll taxes	0.10
Utilities	0.15
Maintenance	0.35

Fixed overhead for each quarter was budgeted at Br. 60, 600. Of the fixed overhead amount, Br. 15, 000 each quarter is depreciation. Overhead expenses are paid as incurred.

The company's quarterly budgeted fixed selling and administrative expenses are as follows:

	20X4 Quarters			
	1	2	3	4
Advertising	Br.20, 000	Br.20, 000	Br.20, 000	Br.20, 000
Executive salaries	55, 000	55, 000	55, 000	55, 000
Insurance	-	1, 900	37,750	-
Property taxes	-	-	-	18, 150
Depreciation	10, 000	10, 000	10, 000	10, 000

The only variable selling and administrative expense, sales commission, is budgeted at Br.1.80 per unit of the budgeted sales. All selling and administrative expenses are paid during the quarter, in cash, with exception of depreciation. New equipment purchases will be made during each quarter of the budget year for Br. 50, 000, Br. 40, 000, & Br.20, 000 each for the last two quarter in cash, respectively. The company declares and pays dividends of Br.8, 000 cash each quarter. The company's balance sheet at December 31, 20x3 is presented below:

ASSETS

Current assets:		
Cash	Br. 42, 500	
Accounts Receivable	90, 000	
Raw Materials Inventory (21, 000 pounds)	4, 200	
Finished Goods Inventory (2, 000 units)	26, 000	
Total current assets		Br.162, 700
Plant and Equipment:		
Land	Br.80, 000	
Building and Equipment	700, 000	
Accumulated Depreciation	(292, 000)	
Plant and Equipment, net		488, 000
Total assets		
Br.650, 700		

LIABILTIES AND STOCKHOLDERS' EQUITY

Current liabilities:		
Accounts payable (raw materials)		Br.25, 800
Stockholders' equity:		
Common stock, no par	Br.175, 000	
Retained earnings	449, 900	
Total stockholders' equity		624, 900

Total liabilities and stockholders' equity Br.650, 700

The company can borrow money from its bank at 10% annual interest. All borrowing must be done at the beginning of a quarter, and repayments must be made at the end of a quarter. All borrowings and all repayments are in multiples of Br. 1,000.

The company requires a minimum cash balance of Br.40, 000 at the end of each quarter. Interest is computed and paid on the principal being repaid only at the time of repayment of principal. The company whishes to use any excess cash to pay loans off as rapidly as possible.

Instructions: Prepare a master budget for the four-quarter period ending December 31. Include the following detailed budget and schedules:

1. a) A sales budget, by quarter and in total
   b) A schedule of budgeted cash collections, by quarter and in total
   c) A production budget
   d) A direct materials purchase budget
   e) A schedule of budgeted cash payments for purchases by quarter and in total
   f) A direct labor budget
   g) A manufacturing overhead budget
   h) Ending finished goods inventory budget
   i) A selling and administrative budget
2. A cash budget, by quarter and in total
3. A budgeted income statement for the four- quarter ending December 31, 20x4
4. A budgeted balance sheet as of December 31, 20x4.

a. Sales budget

Great CO

Sales Budget

For the year ended Dec. 20x5

			Quarter		
	1	2	3	4	Year
Budgeted sales in units	10,000	30,000	40,000	20,000	100,000
Selling price per unit	X $20	X $20	X $20	X $20	X $20
Total Sales	$ 200,000	$ 600,000	$ 800,000	$ 400,000	$ 2,000,000

b) Schedule of Expected Cash Collections

Great Co.

Cash collection Budget

For the year ended Dec. 20x5

	Quarter				
	1	2	3	4	Total
30% of the previous quarter sales	Br. 90, 000	Br.60, 000	Br.180, 000	Br.240, 000	Br.570, 000
70% of the current quarter sales	140, 000	420, 000	560, 000	280, 000	1, 400, 000
Total collections	Br.230, 000	Br.480, 000	Br.740, 000	Br.520, 000	Br.1, 970, 000

c) Production Budget

After the sales budget has been prepared, the production requirements for the forth-coming budget period can be determined and organized in the form of a production budget. Sufficient goods will have to be available to meet sales and provide for the desired ending inventory. A portion of these goods will already exist in the form of a beginning inventory. The remainder will have to be produced. Therefore, production needs can be determined as follows:

Budgeted sales in units ……xxxx
Add desired ending inventory……xxxx
Total needs……xxxx
Less beginning inventory……xxxx
Required production……xxxx

The schedule given below shows the production budget for Great Company. Note that the desired level of the ending inventory influences production requirements for a quarter. Inventories should be carefully planned. Excessive inventories tie up funds and create storage problems. Insufficient inventories can lead to lost sales or crash production efforts in the following period

	Quarter				Total
	1	2	3	4	
Expected sales(units)	10, 000	30, 000	40, 000	20, 000	100, 000
Add: Desired Ending Inventory	6, 000	8, 000	4, 000	3, 000 →	3, 000
Total needs	16, 000	38, 000	44, 000	23, 000	103, 000
Lees: Beginning Inventory	2, 000	6, 000	8, 000	4, 000	2, 000
Units to be produced	14, 000	32,000	36, 000	19, 000	101, 000

d) Direct Materials Budget

Returning to Great Company's budget data, after the production requirements have been computed, a direct materials budget can be prepared. The direct materials budget details the raw materials that must be purchased to fulfill the production budget and to provide for

adequate inventories. The required purchases of raw materials are computed as follows:

Raw materials needed to meet the production schedule……xxxx
Add desired ending inventory of raw materials…… …… .xxxx
Total raw materials needs…… xxxx
Less beginning inventory of raw materials…… … xxxx
Raw materials to be purchased…… xxxx

	Quarter				Total
	1	2	3	4	
Production needs(pounds)	210, 000	480, 000	540, 000	285, 000	1, 515, 000
Add: Desired ending inventory	48, 000	54, 000	28, 500	22, 500	22, 500
Total needs	258, 000	534, 000	568, 500	307, 500	1, 537, 500
Less: Beginning inventory	21, 000	48, 000	54, 000	28, 500	21, 000
Raw materials to be purchased(pounds)	237, 000	486, 000	514, 500	279, 000	1, 516,500

Raw Materials to be purchased (in birrs)

	1	2	3	4	Total
Raw materials to be purchased	237, 000	486, 000	514, 500	279, 000	1, 516, 500
Raw materials cost per pound	x Br.0.20	x Br.0.20	x Br.0.20	x Br.0.20	x Br.0.20
Total	Br.47, 400	Br.97, 200	Br.102, 900	Br.55, 800	Br.303, 300

e) Schedule of Expected Cash Disbursements (for Materials Purchase)

	Quarter	Total

f) Direct Labor Budget

The direct labor budget is also developed from the production budget. Direct labor requirements must be computed so that the company will know whether sufficient labor time is available to meet production needs. By knowing in advance just what will be needed in the way of labor time throughout the budget year, the company can develop plans to adjust the labor force as the situation may require. Firms that neglect to budget run the risk of facing labor shortage or having to hire and lay off at awkward times. Erratic labor policies lead to insecurity and inefficiencies on the part of employees.

To compute direct labor requirements, the number of units of finished product to be produced each produced each period (month, quarter, and so on) is multiplied by the number of direct labor-hours required to produced a single unit. Many different types of labor may be involved. If so, then the computation should be by type of labor needed. The labor requirements can then be translated into expected direct labor costs. How this is done will depend on the labor policy of the firm. In schedule given below, the management of Great Company has assumed that the direct labor force will be adjusted as the work requirement change from quarter to quarter (for example as units produced changes from l4, 000 units in quarter 1 to 32, 000 units in quarter 2 for Great Company, the direct labor work force will be fully adjusted to the workload, i.e., total hours of direct labor time needed). In that case, the total direct labor cost is computed by simply multiplying the direct labor-hour required by the direct labor rate hour as was done in the schedule here under.

	Quarter				Total
	1	2	3	4	
Direct labor time needed	11, 200	25, 600	28, 800	15, 200	80, 800

Direct labor cost per hour	x Br.7.50	x Br.7.50	x Br.7.50	x Br.7.50	x Br.7.50
Total direct labor cost	Br.84, 000	Br.192, 000	Br.216, 000	Br.114, 000	Br.606, 000

g) Manufacturing Overhead (MOH) Budget

The manufacturing overhead budget provides a schedule of all costs of production other than direct materials and direct labor. These costs should be broken down by cost behavior for budgeting purposes and a predetermined overhead rate developed. This rate will be used to apply manufacturing overhead to units of product throughout the budget period.

A computation showing budgeted cash disbursement for manufacturing overhead should be made for use in developing the cash budget. Since some of the overhead costs do not represents cash outflows, the total budgeted manufacturing overhead costs must be adjusted the determine the cash disbursement for manufacturing overhead. At Great Company, the only significant non cash manufacturing overhead cost is depreciation. Any depreciation charges included in manufacturing overhead must be deducted from the total in computing expected cash payments, since depreciation is a non-cash charge.

	Quarter				Total
	1	2	3	4	
Variable overhead	Br.22, 400	Br.51, 200	Br.57, 600	Br.30, 400	Br.161, 600
Fixed overhead	60, 600	60, 600	60, 600	60, 600	242,400
Total MOH	Br.83, 000	Br.111,800	Br.118,200	Br.91, 000	Br.404, 000
Less: Depreciation	15, 000	15, 000	15, 000	15, 000	60, 000
Cash disbursements for MOH	Br.68, 000	Br.96, 800	Br.103,200	Br.76, 000	Br.344, 000

h) Ending Finished Goods Inventory Budget

After completing schedules (a) to (g), the company had all of the data needed to compute unit product costs. This computation was needed for two reasons: first, to know how much to charge as cost of goods sold on the budgeted income statement; and second, to know what amount to put on the balance sheet inventory account for unsold units.

The carrying cost of the unsold units is computed on the ending finished goods inventory budget

Budgeted Finished Goods Inventory 3, 000

Unit product cost Br.13

Ending Finished Goods Inventory in birrs Br.39, 000

Production cost per unit

	Quantity (unit)	**Cost**	**Total**
Direct materials	15 pounds	Br.0.20 per pound	Br.3
Direct labor	0.8 hours	7.50 per hour	6

Manufacturing overhead 0.8 hours 5.00 per hour
4

Unit product cost Br.13

MOH rate= Total MOH = 404, 000 = Br.5.00
Direct labor hours 80, 800

	Quarter				Total
	1	2	3	4	
Variable selling expenses	Br.18, 000	Br.54, 000	Br.72, 000	Br.36, 000	Br.180, 000
Fixed selling & administrative expenses					
Advertising	20, 000	20, 000	20, 000	20, 000	80, 000
Executive salaries	55, 000	55, 000	55, 000	55, 000	220, 000
Insurance	-	1, 900	37, 750	-	39, 650
Property taxes	-	-	-	18,150	18,150
Depreciation	10, 000	10, 000	10, 000	10, 000	40, 000
Total budgeted selling & administrative expenses	Br.103, 000	Br.140, 900	Br.194, 750	Br.139, 150	Br.577, 800

i) Selling and Administrative Expenses Budget

Disbursement for Selling & Administrative Expenses

	Quarter				Total
	1	2	3	4	
Budgeted Selling & Administrative	Br.103, 000	Br.140, 900	Br.194, 750	Br.139, 150	Br.577, 800
Less: Depreciation	10, 000	10, 000	10, 000	10, 000	40, 000

Total Cash Disbursements	Br.93, 000	Br.130, 900	Br.184, 750	Br.129, 150	Br.537, 800

2. a) Cash Budget

	Quarter				Total
	1	2	3	4	
Cash balance, beginning	Br.42, 500	Br.40,0 00	Br.40, 000	Br.40, 500	Br.42, 500
Add :Collection from customers	230, 000	480, 000	740, 000	520, 000	1,970, 000
Total cash available before	272,ıcing 500	520, 000	780, 000	560, 500	2,012, 500
Less: Disbursements for					
Direct materials	49, 500	72, 300	100,050	79, 350	301,200
Direct labor	84, 000	192, 000	216,000	114, 000	606,000
Manufacturing overhead	68, 000	96, 800	103,200	76, 000	344,000
Selling & Administrative	93, 000	130, 900	184,750	129, 150	537,800
Equipment purchases	50, 000	40, 000	20,000	20,000	130,000
Dividend	8, 000	8, 000	8, 000	8, 000	32,000
Total disbursements	352, 500	540,00 0	632,000	426,500	1,951,0 00
Minimum cash balance	40, 000	40, 000	40, 000	40, 000	40, 000
Total need	392, 500	580, 000	672, 000	466, 500	1, 991,000
Excess (deficiency) of cash available over total need	(120, 000)	(60, 000)	108, 000	94, 000	21, 500
Financing:					

Borrowing(at beginning)	120,000	60, 000	-	-	180, 000
Repayments(at ending)	-	-	(100, 000)	(80,000)	(180,000)
Interest(at 10% per annum)	-	-	(7,500)	(6,500)	(14,000)
Total financing	120, 000	60, 000	(107,500)	(86,500)	(14,000)
Cash balance, ending	**Br.40,0 00**	**Br.40, 000**	**Br.40, 500**	**Br.47, 500**	**Br.47, 500**

b) Budgeted Income Statement

Great Company

Budgeted Income Statement

For the Year Ended December31, 20x4

Sales [100, 000units at Br.20 Schedule 1(a)]	Br.2, 000, 000
Cost of Goods Sold	
[100, 000 units at Br.13 Schedule1 (h)]	1, 300, 000
Gross Margin	700, 000
Selling & Administrative Expenses [Schedule 1 (i)]	577, 800
Net Operating Income	122, 200
Interest Expense [Schedule 2(a)]	14, 000
Net Income	**Br. 108, 200**

c) Budgeted Balance Sheet

Great Company

Budgeted Balance Sheet

December31, 20x4

ASSETS

Current assets:

Cash [Schedule 2(a)]	Br. 47, 500	
Accounts Receivable	120, 000	
Raw Materials Inventory	4, 500	
Finished Goods Inventory	39, 000	
Total current assets		Br.211, 000
Plant and Equipment:		
Land	Br.80, 000	
Building and Equipment	830, 000	
Accumulated Depreciation	(392, 000)	
Plant and Equipment, net		518, 000
Total assets		Br.729, 000

LIABILTIES AND STOCKHOLDERS' EQUITY

Current liabilities:		
Accounts payable (raw materials)		Br.27, 900
Stockholders' equity:		
Common stock, no par	Br.175, 000	
Retained earnings	526, 100	
Total stockholders' equity		701, 100
Total liabilities and stockholders' equity		Br.729, 000

Learning activity 2.

Exercise two:

Young Corporation produces Tin the projected sales for the first quarter of the coming year and the beginning and ending inventory data are as follows:

Unit sales	100000

Unit price	Br. 15
Units, beginning inventory	8,000
Units, targeted ending inventory	12000

The Tin is moulded and then painted. Each Tin requires 4 kg of metal, which costs 2.50 per kg. the beginning inventory of raw materials is 4000 kg, young wants to have 6000 kg of metal in inventory at the end of the quarter. Each Tin produced requires 30 Minutes of direct labour time, which is billed at Br. Per hour.

Required:

1. Prepare the a sales budget for the first quarter
2. Prepare production budget for the first quarter
3. Prepare a direct materials purchase budget for the first quarter
4. Prepare a direct labour budget for the first quarter.

1.8 SUMMARY

Budgeting is the creation of plan of action expressed in financial terms. Budgeting plays a key role in planning, control, and decision-making. Budgets, among other things, force planning, serve to improve communication and coordination, allocates scarce recourses and used to evaluate performance.

The comprehensive set of budgets that covers all phases of an organization’s operations is called a master budget. The first step in preparing a master budget is to forecast sales of the organization’s services or goods. Based on the sales forecast, operational budgets are prepared to plan production of services or goods and to outline the acquisition and use of material, labor and other resources. Finally, a

set of budget financial statements are prepared to show what the organization's overall financial condition will be if planned operations are carried out.

The success of a budgetary system depends on how seriously human factors are considered. To discourage dysfunctional behaviour, organizations should avoid overemphasizing budgets as a control mechanism and use a participative budgeting process.

Participative budgeting is the process of allowing employees throughout the organization to have a significant role in developing the budget. Participative budgeting can result in greater commitment to meet the budget by those who participated in the process.

Budgeting systems ate costly. They are needed because it is believed and assured that the systems will help organizations make better collective operating and financial decisions.

Check your progress question

1. CZ is a merchandising company engaged in the purchasing and selling of electrical appliances. You as a management accountant have been asked to prepare a complete master budget for your store for June, July and August, so you gather the following data as of may 31, 2005:

Cash	$ 21,000	Accounts Payable	$ 340,000
Inventory	300,000	Owners' equity	362,000
Accounts receivable	261,000	Total liabilities and	
Net furnitures and fixtures	120,000	owners' equity	702,000
Total Assets	702,000		

Recent and projected sales

April	$200,000
May	250,000
June	500,000

July	300,000
August	300,000
September	200,000

Credit sales are 90% of total sales. Credit accounts are collected 80% in the month following the sale and 20% in the next following month. Assume that bad debts are negligible and can be ignored. The average gross profit on sales is 40%.

The policy is to acquire enough inventories each month to equal the following month's projected sales. All purchases are paid for in the month following purchase.

Salaries, wages and commissions average 20% of sales: all other variable expenses are 4% of sales. Fixed expenses for rent, property taxes, and miscellaneous payroll and other items are $ 40,000 monthly. Assume that these variable and fixed expenses require cash disbursements each month. Depreciation is $ 2,000 monthly.

In June, $ 40,000 is going to be disbursed for fixtures acquired in May. The May 31 balance of accounts payable includes this amount.

Assume that a minimum cash balance of $ 20,000 is to be maintained. Also assume that all borrowings are effective at the beginning of the month and all repayments are made at the end of the month of repayment. Interest is paid only at the repaying principal. Interest rate is 12% per annum: round interest computation to the nearest ten dollars.

Required

Prepare a budgeted income statement for the coming quarter, a budgeted statement of monthly cash receipts and disbursements (for the next 3 months), and a budgeted balance sheet for August 30, 2005. All operations are evaluated on a before income tax basis. (Ignore income taxes).

2. The following data relates to the operations of Good Life Ltd. a retail store:

Sales plan 2006	
May	Br. 60,000
June	80,000
July	100,000
August	120,000

a. Selling price per unit Br. 10
b. Cost of goods per unit is Br.6. Variable operating expenses are 20% of sales
c. Inventory is maintained at 150% of the next month's sales in units.
d. Fixed operating expenses are Br. 180,000 per year allocated for each month proportionately

Required:

A. Prepare a purchase budget in Br. for July 2006
B. Prepare a budget income statement for July 2006

3. Information pertaining to **Brothers' co.** sales revenue as per the plan follows:

	November 2005	**December 2005**	**January 2006**	**February\ 2006**
Cash sales	Br. 80000	Br. 80000	Br. 50000	Br. 40000
Credit sales			24000	320000
			170000	120000

Management estimates that 5% of credit sales are uncollectible. Of the credit sales that are collectible, 70% are collected in the month of sale and the remainder in the month following the sale. Purchases of inventory each month are 60% of the next month's projected total sales. All purchases of inventory are on account; 30% are paid in the

month of purchase and the remainder is paid in the month following the purchase.

Required:

A. What are budgeted cash collections in December 2005 form November 2005 credit sales.

B. What are total budgeted cash receipts in January 2006?

C. Prepare a schedule for budgeted cash payments for purchases for December 2005 and January 2006.

4. Gorgeous Retail Company has the following data

Part of the trial balance at March 1 showed:

	Debit	Credit
Cash	Br. 12,000	
Account receivable	39,000	
Allowance for bad debt		Br.4, 800
Merchandise inventory	24,000	
Account payable (Merchandise)		18,000

The company's purchase are payable with in 10 days. Assume that one –third of the purchases of any month are due and paid in the following month.

The unit invoice cost of the merchandise purchased is Br. 10. At the end of each month, the company's policy is to have an inventory equal to 50% of the following month's unit sales.

Past experience indicates that 60% of the billings will be collected during the month of sale, 30% in the following month, 6 % in the next following month and 4% will be uncollectible.

Sales data are as follows:

Selling price per unit	Br. 30
January actual sales revenue	30000
February actual sales revenue	90000
March estimated sales revenue	72000
April estimated sales revenue	54000

May estimated sales revenue 96000

Total sales expected for the year 900,000

The company's fiscal year begins January 1. Exclusive of bad debts, the total budgeted selling and administrative expenses for the year are estimated at Br. 141,000 of which Br. 42000 is fixed expenses (inclusive of a Br. 18,000 annual depreciation charge). These fixed expenses are incurred uniformly throughout the year. The balance of selling and administrative expense varies with sales. Expenses are paid as incurred.

Required: prepare a cash budget for March and April. (Provide a supporting schedule of cash collection.

1. 9 ANSWER KEY TO LEARNING ACTIVITY QUESTIONS

Learning Activity 1.

1. Forces periodic planning
   Fosters coordination, integration and communication
   Promotes continuous improvement
   Guides performance
   Facilitates evaluation and control
   Create cost awareness
2. Master budget is a company's overall financial plan for the coming year or other planning period, which usually includes an operating budget, a cash budget and projected financial statements.
3. Problem of conflict due to conflicting interest between departments.
   Imposed budget problem
   Use of Budget as check up device for individual performance
   Unwise adherence to budget

Learning activity 2.

1. Sales budget

Units……100000

X unit price …… Br. 15

Sales	Br. 1500000

2. Production budget

Sales (in units)	100000
Desired ending inventory	12000
Total needs	112,000
Less: beginning inventory	(8,000)
Units to be produced	104,000

3. Direct materials budget

Units to be produced	104,000
Direct materials per unit (kg)	x 4
Production needs (kg)	416,000
Desired ending inventory (kg)	6,000
Total needs (kg)	422,000
Less: Beginning inventory (kg)	(4,000)
Materials to be purchased (kg)	418,000
Cost per kg	X Br. 2.50
Total purchased cost	Br. 1,045,000

4. Direct labour budget

Units to be produced	104,000
Labour: Time per unit	x 0.5
Total hours needed	Br. 2000
Cost per hour	x Br. 9
Total direct labour cost	Br. 468,000