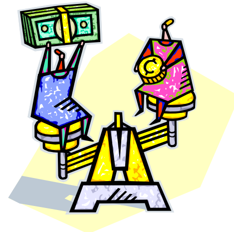
Master Budgeting

Chapter 10

The Basic Framework of Budgeting

A **budget** is a detailed quantitative plan for acquiring and using financial and other resources over a specified forthcoming time period.

1. The act of preparing a budget is called **budgeting**.
2. The use of budgets to control an organization's activities is known as **budgetary control**.

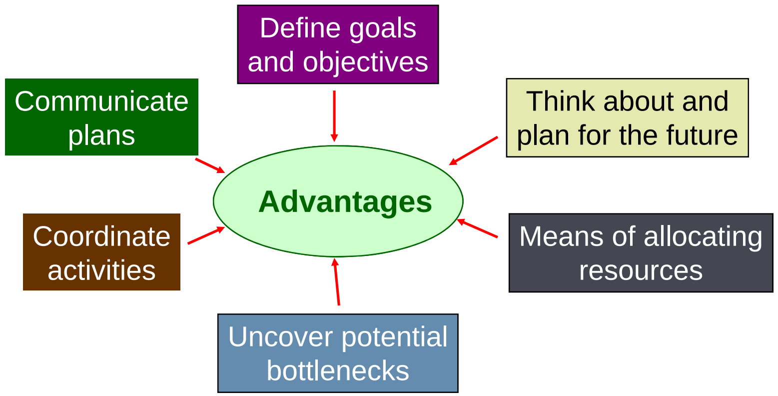


Planning and Control

Planning – involves developing objectives and preparing various budgets to achieve those objectives.

Control – involves the steps taken by management to increase the likelihood that the objectives set down while planning are attained and that all parts of the organization are working together toward that goal.

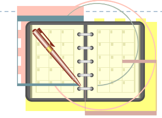
Advantages of Budgeting

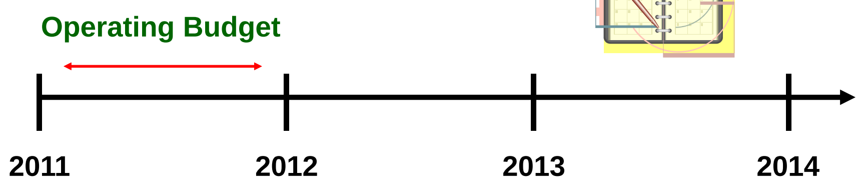


Responsibility Accounting

Managers should be held responsible for those items - and *only* those items - that they can actually control to a significant extent.

Choosing the Budget Period





Operating budgets ordinarily cover a one-year period corresponding to a company's fiscal year. Many companies divide their annual budget into four quarters.

A continuous budget is a 12-month budget that rolls forward one month (or quarter) as the current month (or quarter) is completed.

Bottom-up and Top-down Budgeting

Bottom-up budgeting (Self-imposed budget or Participative budget)	**Top-down budgeting**
Lower-level Management → Middle Management → Top Management	Top Management → Middle Management → Lower-level Management

Advantages of the Bottom-up Budgeting (Self-Imposed Budgets)

1. Individuals at all levels of the organization are viewed as members of the team whose judgments are valued by top management.
2. Budget estimates prepared by front-line managers are often more accurate than estimates prepared by top managers.
3. Motivation is generally higher when individuals participate in setting their own goals than when the goals are imposed from above.
4. A manager who is not able to meet a budget imposed from above can claim that it was unrealistic. Self-imposed budgets eliminate this excuse.

Advantages of the Top-down Budgeting

1. Avoid the potential budgetary slack (budget padding).
2. Provide a clearer performance goals and expectations from the top management.
3. May provide better budget due to top management's access to privileged/confidential market and organization information .
4. Provide an efficient budgetary process.

Incremental versus Zero-based Budgets

- **Incremental method of budgeting** is most commonly used by companies. Companies start off one year's budget by referring back to the previous year's figures. Adjustments are then made to the budget to account for the expected changes such as prices for the next year.

- While incremental method of budgeting is practical and fast, any inefficiency in the previous year's figures may be carried forward. For example, if all along the organization is over staffed, then the budget will continually to be allowing for the over staffing situation under this method.

Incremental versus Zero-based Budgets

- **Zero-Based Budgets** are prepared based on the assumption that the company has just started. Therefore, resources required have to be justified from scratch.

- For example, when budgeting for staff cost for a restaurant, managers using the zero-based budgeting approach will ignore the existing staff level and expenses, rather, they will examine factors such as opening hours, number of tables, expected patron numbers to work out the number of staff required at each position and level, hence the associate costs, to produce a budget.

Notes:

The Budget Committee

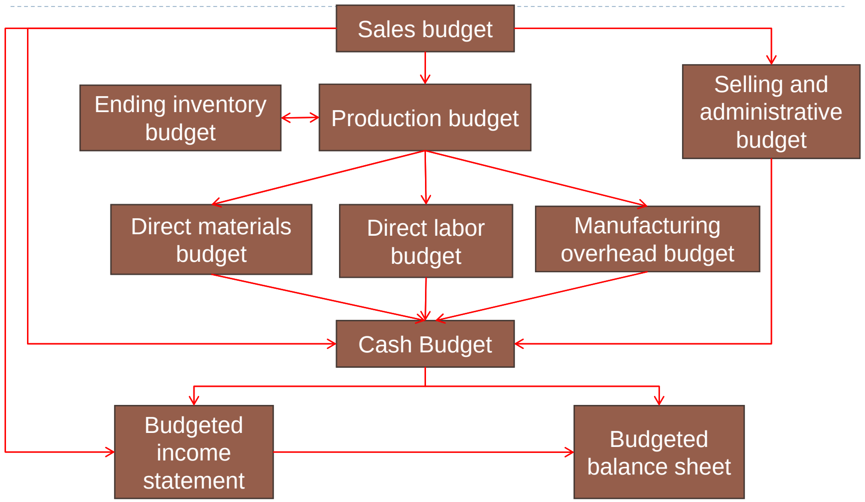
A standing committee responsible for
- overall policy matters relating to the budget
- coordinating the preparation of the budget
- resolving disputes related to the budget
- approving the final budget

Key components of master budget in Manufacturing, Merchandising, and Service Industries

Although operational budgets are adapted according to the industries, they are very similar and typically comprise of budgets for
- Income statement
- Cash
- Balance sheet.

The major differences of different industries include:
- Manufacturing: production budget is involved
- Merchandising: no production budget, only purchase budget of merchandise is required.
- Service Industries: budget for revenue and cost of providing services
- Not-for-profit: expected funding available and plan usage of funding.

The Master Budget: An Overview



Budgeting Example

❶ Royal Company is preparing budgets for the quarter ending June 30.

❷ Budgeted sales for the next five months are:

April	**20,000 units**
May	**50,000 units**
June	**30,000 units**
July	**25,000 units**
August	**15,000 units.**

❸ The selling price is $10 per unit.

The Sales Budget

The individual months of April, May, and June are summed to obtain the total budgeted sales in units and dollars for the quarter ended June 30th

	April	May	June	Quarter
Budgeted sales in units	20,000	50,000	30,000	100,000
Selling price per unit	$ 10	$ 10	$ 10	$ 10
Total budgeted sales	$ 200,000	$ 500,000	$ 300,000	$ 1,000,000

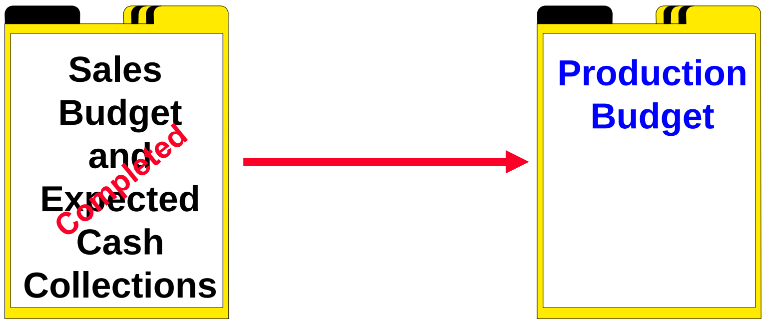
Expected Cash Collections

- All sales are on account.
- Royal's collection pattern is:
  70% collected in the month of sale,
  25% collected in the month following sale,
  5% uncollectible.
- The March 31 accounts receivable balance of $30,000 will be collected in full.

Expected Cash Collections

	April	May	June	Quarter
Accounts receivable 3/31	$ 30,000			$ 30,000
Total cash collections				

The Production Budget



The production budget must be adequate to meet budgeted sales and to provide for the desired ending inventory.

The Production Budget

- The management at Royal Company wants ending inventory to be equal to *20%* of the following month's budgeted sales in units.
- On March 31, 4,000 units were on hand.

Let's prepare the production budget.

The Production Budget

	April	May	June	Quarter
Budgeted Sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory				
Total Needs				
Less: Beginning inventory				
Required production				

The Direct Materials Budget

- At Royal Company, *five pounds* of material are required per unit of product.
- Management wants materials on hand at the end of each month equal to *10%* of the following month's production.
- On March 31, 13,000 pounds of material are on hand. Material cost is *$0.40* per pound.

Let's prepare the direct materials budget.

The Direct Materials Budget

	April	May	June	Quarter
Production	26,000	46,000	29,000	101,000
Materials per unit (pounds)	5	5	5	5
Production needs	130,000	230,000	145,000	505,000
Add: Desired ending inventory				
Total needed				
Less: Beginning inventory				
Materials to be purchased				

From production budget

Expected Cash Disbursement for Materials

- Royal pays *$0.40 per pound* for its materials.
- *One-half* of a month's purchases is paid for in the month of purchase; the other half is paid in the following month.
- The March 31 accounts payable balance is $12,000.

Let's calculate expected cash disbursements.

Expected Cash Disbursement for Materials

		April	May	June	Quarter
37	Accounts payable 3/31	$ 12,000			$ 12,000
38					
39					
40					
41					
42					
43					
44					
45					
46	Total cash disbursements				

The Direct Labor Budget

- At Royal, each unit of product requires *0.05* hours (3 minutes) of direct labor.
- The Company has a "no layoff" policy so all employees will be paid for 40 hours of work each week.
- For purposes of our illustration assume that Royal has a "no layoff" policy, workers are pay at the rate of $10 per hour regardless of the hours worked.
- For the next three months, the direct labor workforce will be paid for a minimum of 1,500 hours per month.

Let's prepare the direct labor budget.

The Direct Labor Budget

		April	May	June	Quarter
48	Units of production	26,000	46,000	29,000	101,000
49	Direct labor per unit	0.05	0.05	0.05	0.05
50	Labor hours required	1,300	2,300	1,450	5,050
51					
52					
53					
54	Total direct labor costs				

From production budget.

The Direct Labor Budget

		April	May	June	Quarter
48	Units of production	26,000	46,000	29,000	101,000
49	Direct labor per unit	0.05	0.05	0.05	0.05
50	Labor hours required	1,300	2,300	1,450	5,050
51	Guaranteed labor hours	1,500	1,500	1,500	
52	Labor hours paid	1,500	2,300	1,500	5,300
53	Hourly wage rate	$ 10	$ 10	$ 10	$ 10
54	Total direct labor costs	$ 15,000	$ 23,000	$ 15,000	$ 53,000

Quick Check ✓

What would be the total direct labor cost for the quarter if the company follows its no lay-off policy, but pays $15 (time-and-a-half) for every hour worked in excess of 1,500 hours in a month?

a. $79,500

b. $64,500

c. $61,000

d. $57,000

Notes:

Manufacturing Overhead Budget

- At Royal, manufacturing overhead is applied to units of product on the basis of direct labor hours.
- The variable manufacturing overhead rate is $20 per direct labor hour.
- Fixed manufacturing overhead is $50,000 per month, which includes $20,000 of noncash costs (primarily depreciation of plant assets).

Let's prepare the manufacturing overhead budget.

Manufacturing Overhead Budget

	April	May	June	Quarter
Budgeted DLH	1,300	2,300	1,450	5,050
Variable mfg. OH rate	$ 20	$ 20	$ 20	$ 20
Variable mfg. OH costs	$ 26,000	$ 46,000	$ 29,000	$ 101,000
Fixed mfg. OH costs				
Total mfg. OH costs				
Less: noncash costs				
Cash disbursements for manufacturing OH				

Direct Labor Budget.

Manufacturing Overhead Budget

	April	May	June	Quarter
Budgeted DLH	1,300	2,300	1,450	5,050
Variable mfg. OH rate	$ 20	$ 20	$ 20	$ 20
Variable mfg. OH costs	$ 26,000	$ 46,000	$ 29,000	$ 101,000
Fixed mfg. OH costs	50,000	50,000	50,000	150,000
Total mfg. OH costs	76,000	96,000	79,000	251,000
Less: noncash costs	20,000	20,000	20,000	60,000
Cash disbursements for manufacturing OH	$ 56,000	$ 76,000	$ 59,000	$ 191,000

Depreciation is a noncash charge.

Notes:

Ending Finished Goods Inventory Budget

Production costs per unit	Quantity		Cost	Total
Direct materials	5.00	lbs.	$ 0.40	$ 2.00
Direct labor	0.05	hrs.	$ 10.00	0.50
Manufacturing overheac	0.05	hrs.	$ 49.70	2.49
				$ 4.99
Budgeted finished goods inventory				
Ending inventory in units				
Unit product cost				$ 4.99
Ending finished goods inventory				

Direct materials budget and information.

Direct labor budget.

$$\frac{\text{Total mfg. OH for quarter } \$251{,}000}{\text{Total labor hours required } 5{,}050} = \$49.70 \text{ per hour *}$$

Selling and Administrative Expense Budget

- At Royal, the selling and administrative expense budget is divided into variable and fixed components.
- The variable selling and administrative expenses are $0.50 per unit sold.
- Fixed selling and administrative expenses are $70,000 per month.
- The fixed selling and administrative expenses include $10,000 in costs – primarily depreciation – that are not cash outflows of the current month.

Let's prepare the company's selling and administrative expense budget.

Selling and Administrative Expense Budget

	April	May	June	Quarter
Budgeted sales	20,000			
Variable S & A rate	$ 0.50			
Variable expenses	$ 10,000			
Fixed S & A expenses	70,000			
Total S & A expenses	80,000			
Less: Noncash expenses	10,000			
Cash S & A expenses	$ 70,000			?

Calculate the selling and administrative cash expenses for the quarter.

Notes:

Selling Administrative Expense Budget

	April	May	June	Quarter
Budgeted sales	20,000	50,000	30,000	100,000
Variable S & A rate	$ 0.50	$ 0.50	$ 0.50	$ 0.50
Variable expenses	$ 10,000	$ 25,000	$ 15,000	$ 50,000
Fixed S & A expenses	70,000	70,000	70,000	210,000
Total S & A expenses	80,000	95,000	85,000	260,000
Less: Noncash expenses	10,000	10,000	10,000	30,000
Cash S & A expenses	$ 70,000	$ 85,000	$ 75,000	$ 230,000

Format of the Cash Budget

The cash budget is divided into four sections:

1. Cash receipts section lists all cash inflows excluding cash received from financing;
2. Cash disbursements section consists of all cash payments excluding repayments of principal and interest;
3. Cash excess or deficiency section determines if the company will need to borrow money or if it will be able to repay funds previously borrowed; and
4. Financing section details the borrowings and repayments projected to take place during the budget period.

The Cash Budget

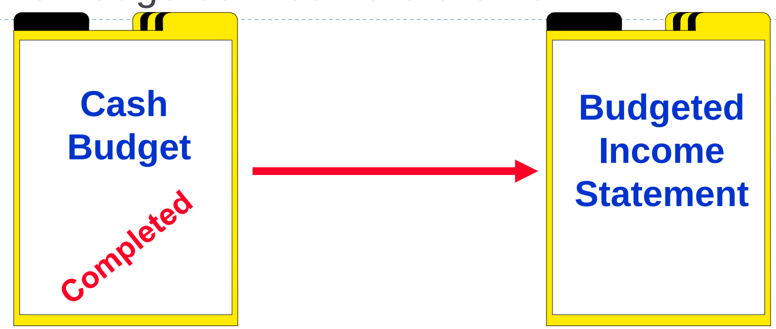
Assume the following information for Royal:

- Maintains a 16% open line of credit for $75,000
- Maintains a minimum cash balance of $30,000
- Borrows on the first day of the month and repays loans on the last day of the month
- Pays a cash dividend of $49,000 in April
- Purchases $143,700 of equipment in May and $48,300 in June (both purchases paid in cash)
- Has an April 1 cash balance of $40,000

The Cash Budget

		April	May	June	Quarter
64	Beginning cash balance	$ 40,000			
65	Add: Cash collections	170,000			
66	Total cash available	210,000			
67	Less: Cash disbursements				
68	Materials	40,000			
69	Direct labor	15,000			
70	Manufacturing overhead	56,000			
71	Selling and administrative	70,000			
72	Equipment purchase	-			
73	Dividend	49,000			
74	Total disbursements	230,000			
75	Excess (deficiency)	(20,000)			
76	Financing:				
77	Borrowing	50,000			
78	Repayments	-			
79	Interest	-			
80	Total financing	50,000			
81	Ending cash balance	$ 30,000			

The Budgeted Income Statement



With interest expense from the cash budget, Royal can prepare the budgeted income statement.

The Budgeted Income Statement

Royal Company
Budgeted Income Statement
For the Three Months Ended June 30

Sales (100,000 units @ $10)	$ 1,000,000
Cost of goods sold (100,000 @ $4.99)	499,000
Gross margin	501,000
Selling and administrative expenses	260,000
Operating income	241,000
Interest expense	2,000
Net income	$ 239,000

Sales Budget.

Ending Finished Goods Inventory.

Selling and Administrative Expense Budget.

Cash Budget.

The Budgeted Balance Sheet

Royal reported the following account balances prior to preparing its budgeted financial statements:

- Land - $50,000
- Common stock - $200,000
- Retained earnings - $146,150 (April 1)
- Equipment - $175,000

Notes:

Royal Company
Budgeted Balance Sheet
June 30

Assets:		
Cash	$	43,000
Accounts receivable		75,000
Raw materials inventory		4,600
Finished goods inventory		24,950
Land		50,000
Equipment		367,000
Total assets		564,550
Liabilities and Stockholders' Equity		
Accounts payable	$	28,400
Common stock		200,000
Retained earnings		336,150
Total liabilities and stockholders' equity	$	564,550

25% of June sales of $300,000.

11,500 lbs. at $0.40/lb.

5,000 units at $4.99 each.

50% of June purchases of $56,800.

Royal Company
Budgeted Balance Sheet
June 30

Assets:		
Cash	$	[illegible]
Accounts receivable		[illegible]
Raw materials inventory		[illegible]
Finished goods inventory		24,950
Land		50,000
Equipment		367,000
Total assets		564,550
Liabilities and Stockholders' Equity		
Accounts payable	$	28,400
Common stock		200,000
Retained earnings		336,150
Total liabilities and stockholders' equity	$	564,550

Beginning balance	$146,150
Add: net income	239,000
Deduct: dividends	(49,000)
Ending balance	$336,150

End of Chapter 10