

# Master Budgeting

# 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.

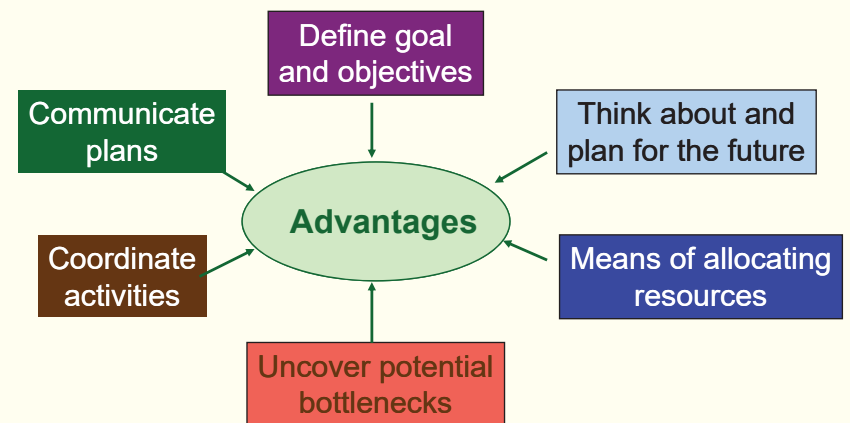
1. The act of preparing a budget is called **budgeting**.
2. The use of budgets to control an organization's activity is known as **budgetary control**.

# Planning and Control

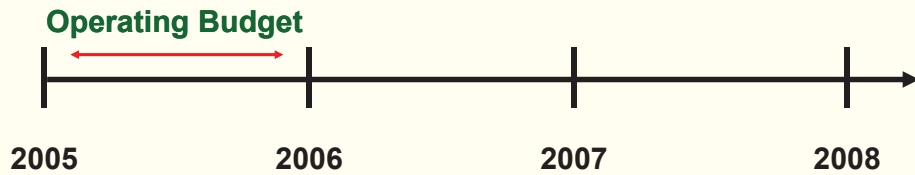
**Planning** – involves developing objectives and preparing various budgets to achieve these objectives.

**Control** – involves the steps taken by management that attempt to ensure the objectives are attained.

# Advantages of Budgeting



## Choosing the Budget Period

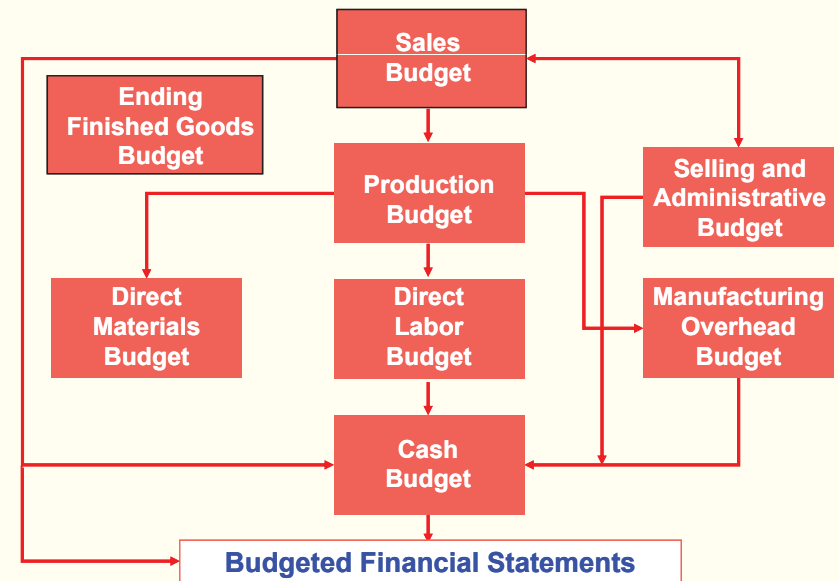


The annual operating budget may be divided into quarterly or monthly budgets.

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

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## The Master Budget: An Overview



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## Budgeting Example

- ① Royal Company is preparing budgets for the quarter ending June 30.
- ② 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.
- ③ The selling price is \$10 per unit.

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## The Sales Budget

	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

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## 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.

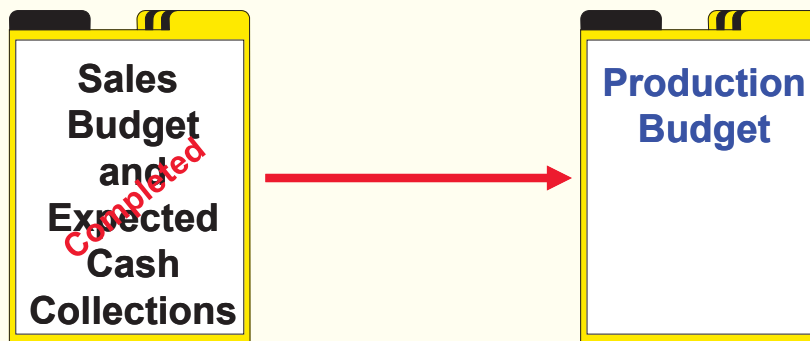
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## Expected Cash Collections

	April	May	June	Quarter
Accounts receivable 3/31	\$ 30,000			\$ 30,000
<b>April Sales</b>				
70% x \$200,000	140,000			140,000
25% x \$200,000		50,000		50,000
<b>May Sales</b>				
70% x \$500,000		350,000		350,000
25% x \$500,000			125,000	125,000
<b>Total cash collections</b>	<b>\$ 170,000</b>	<b>\$ 400,000</b>		

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## The Production Budget



Production must be adequate to meet budgeted sales and provide for sufficient ending inventory.

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## 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.

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## The Production Budget

	April	May	June	Quarter
Budgeted Sales	20,000	50,000	30,000	100,000
Add: Desired ending inventory	10,000	6,000	5,000	5,000
Total Needs	30,000	56,000	35,000	105,000
Less: Beginning inventory	4,000	10,000	6,000	4,000
Required production	26,000	46,000	29,000	101,000

Assumed ending inventory.

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## The Production Budget

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## 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.

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## 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	23,000	14,500	11,500	11,500
Total needed	153,000	244,500	156,500	516,500
Less: Beginning inventory	13,000	23,000	14,500	13,000
Materials to be purchased	140,000	221,500	142,000	503,500

Assumed ending inventory

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# The Direct Materials 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
Accounts payable 3/31	\$ 12,000			\$ 12,000
April purchases				
50% x \$56,000	28,000			28,000
50% x \$56,000		28,000		28,000
<b>Total cash disbursements</b>				

Compute the expected cash disbursements for materials for the quarter.

**140,000 lbs. x \$.40/lb. = \$56,000**

# 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.
- In exchange for the "no layoff" policy, workers agree to a wage rate of **\$10 per hour** regardless of the hours worked (no overtime pay).
- 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
Units of production	26,000	46,000	29,000	101,000
Direct labor per unit	0.05	0.05	0.05	0.05
Labor hours required	1,300	2,300	1,450	5,050
Guaranteed labor hours	1,500	1,500	1,500	
Labor hours paid	1,500	2,300	1,500	5,300
Hourly wage rate	\$ 10	\$ 10	\$ 10	\$ 10
Total direct labor costs	\$ 15,000	\$ 23,000	\$ 15,000	\$ 53,000

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## 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 and includes \$20,000 of noncash costs (primarily depreciation of plant assets).

Let's prepare the manufacturing overhead budget.

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## 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	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.

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## Ending Finished Goods Inventory Budget

<u>Production costs per unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Direct materials	5.00 lbs.	\$ 0.40	\$ 2.00
Direct labor	0.05 hrs.	\$10.00	0.50
Manufacturing overhead	0.05 hrs.	\$49.70	2.49
			<u>\$ 4.99</u>
<b><u>Budgeted finished goods inventory</u></b>			
Ending inventory in units			<b>5,000</b>
Unit product cost			<u>\$ 4.99</u>
Ending finished goods inventory			<u><u>\$24,950</u></u>

Production Budget.

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## Selling and Administrative Expense Budget

- At Royal, the selling and administrative expenses 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.

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## 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	<u>\$ 70,000</u>			<u>?</u>

Calculate the selling and administrative cash expenses for the quarter.

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## The Cash Budget

### 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 quarter.
- 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

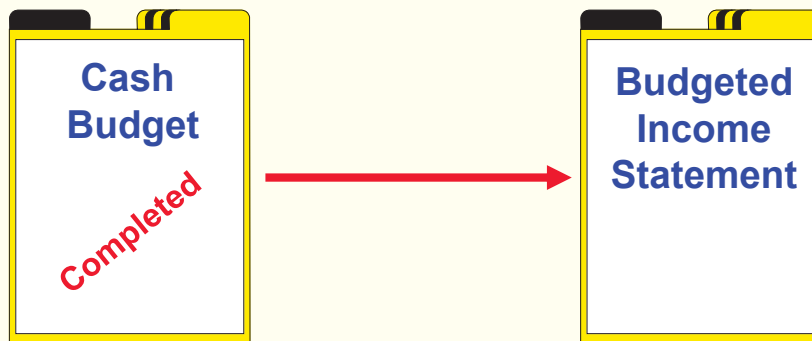
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## The Cash Budget

	April	May	June	Quarter
Beginning cash balance	\$ 40,000	\$ 30,000	\$ 30,000	\$ 40,000
Add: Cash collections	170,000	400,000	335,000	905,000
Total cash available	210,000	430,000	365,000	945,000
Less: Cash disbursements				
		72,300	72,700	185,000
		23,000	15,000	53,000
		76,000	59,000	191,000
		85,000	75,000	230,000
		143,700	48,300	192,000
Dividend	49,000	-	-	49,000
Total disbursements	230,000	400,000	270,000	900,000
Excess (deficiency)	(20,000)	30,000	95,000	45,000
Financing:				
Borrowing	50,000	-	-	50,000
Repayments	-	-	(50,000)	(50,000)
Interest	-	-	(2,000)	(2,000)
Total financing	50,000	-	(52,000)	(2,000)
Ending cash balance	\$ 30,000	\$ 30,000	\$ 43,000	\$ 43,000

**\$50,000 × 16% × 3/12 = \$2,000**  
**Borrowings on April 1 and repayment on June 30.**

## The Budgeted Income Statement



After we complete the cash budget, we can prepare the budgeted income statement for Royal.

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## 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

Annotations with arrows pointing to the table:

- Sales Budget.** (points to Sales)
- Ending Finished Goods Inventory.** (points to Cost of goods sold)
- Selling and Administrative Expense Budget.** (points to Selling and administrative expenses)
- Cash Budget.** (points to Interest expense)

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# 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
- Equipment - \$175,000

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## Royal Company Budgeted Balance Sheet June 30

<b>Current assets</b>	
Cash	\$ 43,000
Accounts receivable	75,000
Raw materials inventory	4,600
Finished goods inventory	24,950
<b>Total current assets</b>	<u>147,550</u>
<b>Property and equipment</b>	
Land	50,000
Equipment	367,000
<b>Total property and equipment</b>	<u>417,000</u>
<b>Total assets</b>	<u>\$ 564,550</u>
<b>Liabilities and equities</b>	
Accounts payable	\$ 28,400
Common stock	200,000
Retained earnings	336,150
<b>Total liabilities and equities</b>	<u>\$ 564,550</u>

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.

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## Royal Company Budgeted Balance Sheet June 30

<b>Current assets</b>	
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Accounts receivable	75,000
Raw materials inventory	4,600
Finished goods inventory	24,950
<b>Total current assets</b>	<u>147,550</u>
<b>Property and equipment</b>	
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<b>Liabilities and equities</b>	
Accounts payable	\$ 28,400
Common stock	200,000
Retained earnings	336,150
<b>Total liabilities and equities</b>	<u>\$ 564,550</u>

Beginning balance	\$146,150
Add: net income	239,000
Deduct: dividends	(49,000)
<b>Ending balance</b>	<u>\$336,150</u>

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