

Master Budgeting

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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**.

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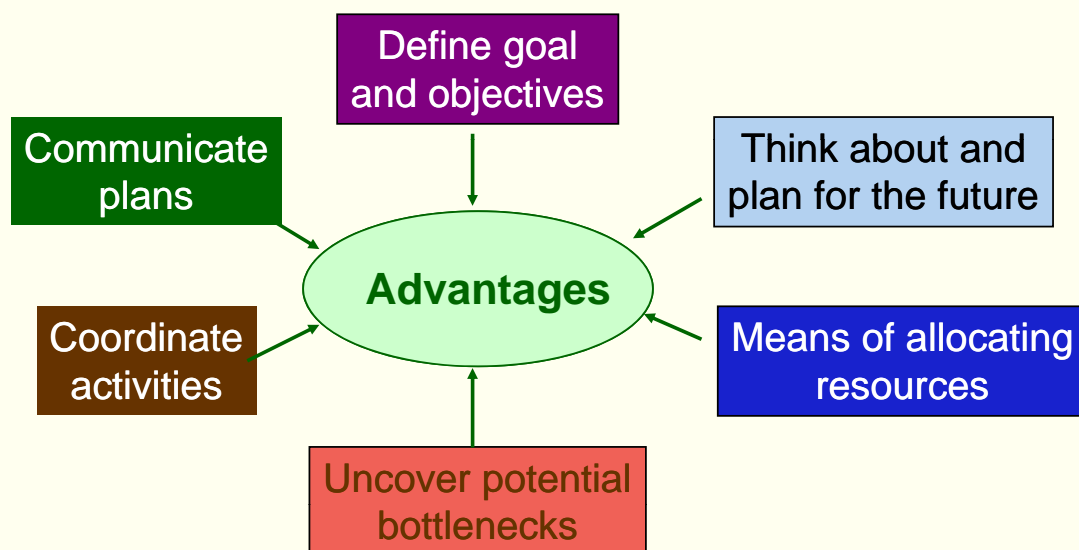
Planning and Control

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.

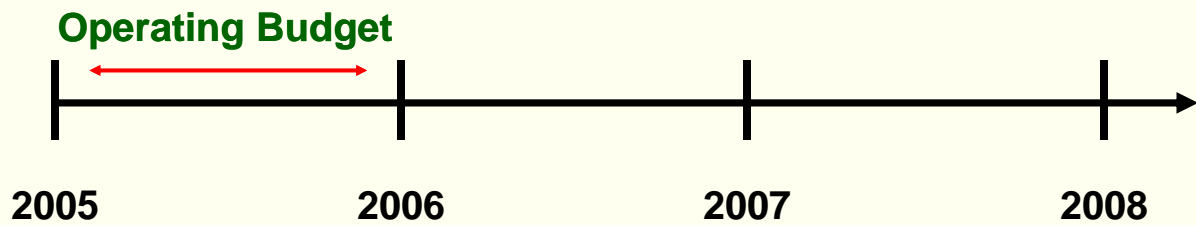
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Advantages of Budgeting



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Choosing the Budget Period

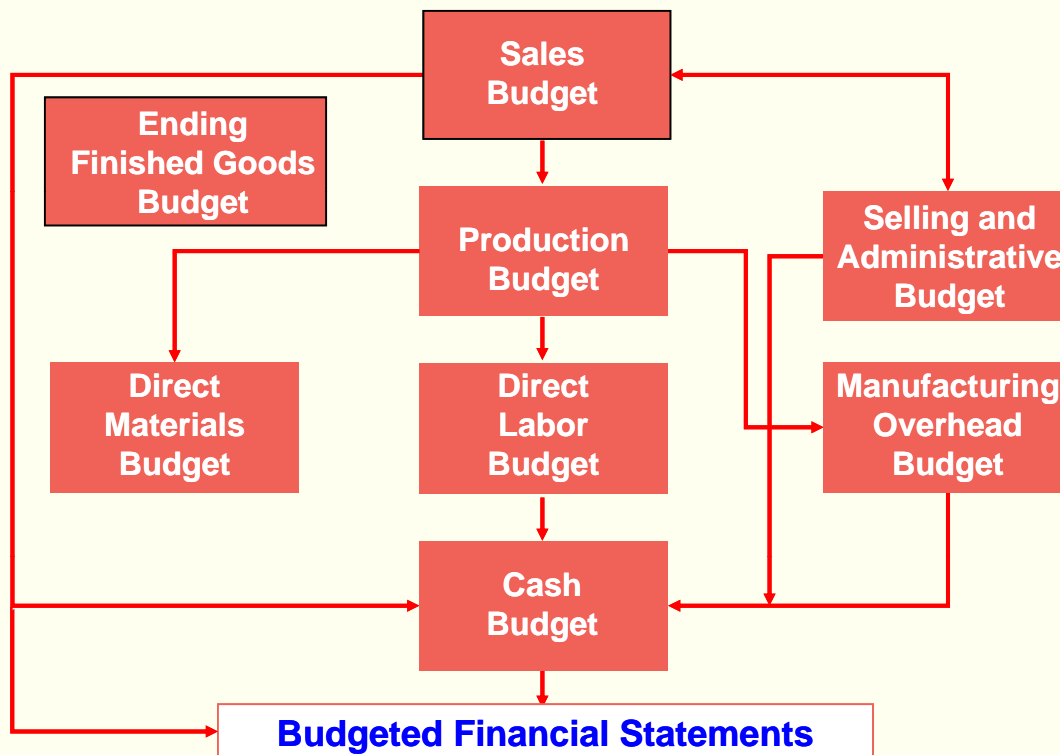


The annual operating budget may be divided into quarterly or monthly budgets.

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



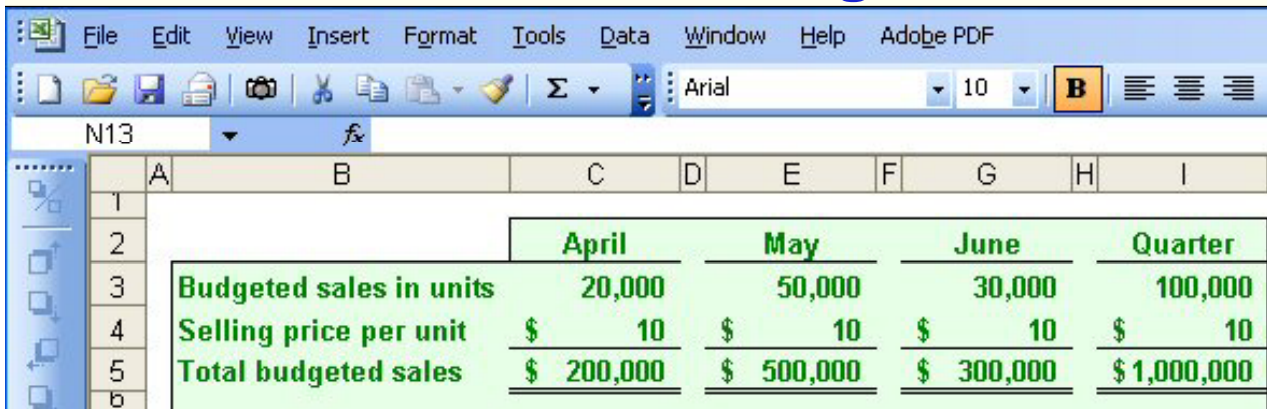
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Budgeting Example

- 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



The screenshot shows a spreadsheet application window with a menu bar (File, Edit, View, Insert, Format, Tools, Data, Window, Help, Adobe PDF) and a toolbar. The spreadsheet content is as follows:

	A	B	C	D	E	F	G	H	I
1									
2			April	May	June	Quarter			
3		Budgeted sales in units	20,000	50,000	30,000	100,000			
4		Selling price per unit	\$ 10	\$ 10	\$ 10	\$ 10			
5		Total budgeted sales	\$ 200,000	\$ 500,000	\$ 300,000	\$ 1,000,000			
6									

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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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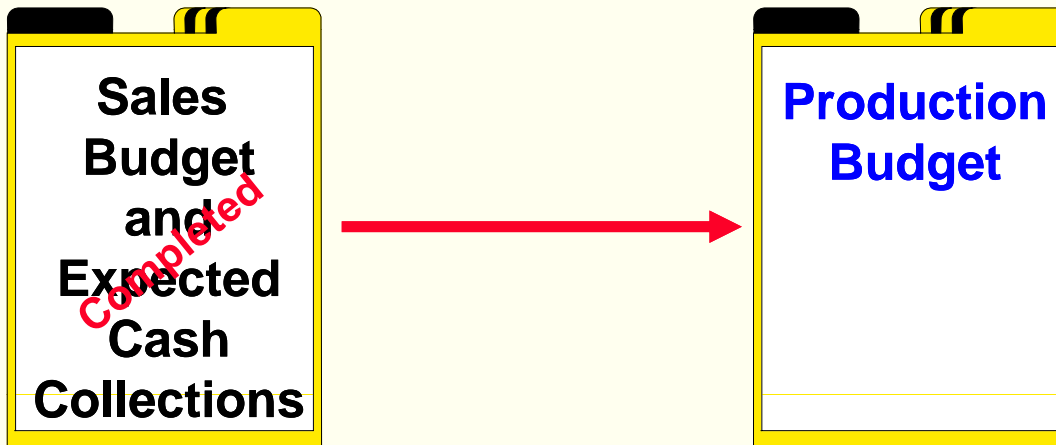
Expected Cash Collections

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

From the Sales Budget for May.

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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
21					
22	Budgeted Sales	20,000	50,000	30,000	100,000
23	Add: Desired ending inventory	10,000	6,000	5,000	5,000
24	Total Needs	30,000	56,000	35,000	105,000
25	Less: Beginning inventory	4,000	10,000	6,000	4,000
26	Required production	26,000	46,000	29,000	101,000
27					

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

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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.

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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
Total cash disbursements				

$$140,000 \text{ lbs.} \times \$0.40/\text{lb.} = \$56,000$$

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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.

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The Direct Labor Budget

		April	May	June	Quarter
28					
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
55					

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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

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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>
<u>Budgeted finished goods inventory</u>			
Ending inventory in units			5,000
Unit product cost			\$ 4.99
Ending finished goods inventory			<u>\$24,950</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

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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	\$ 70,000			?

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

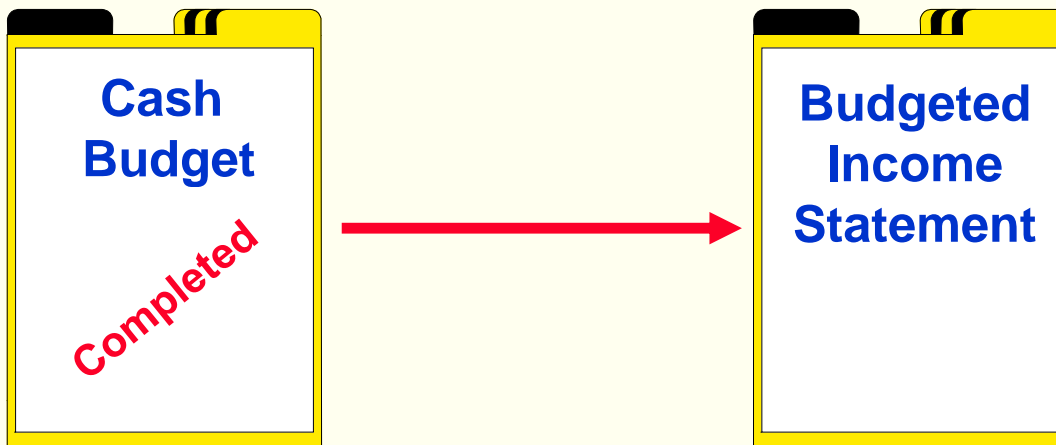
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The Cash Budget

	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

$\$50,000 \times 16\% \times 3/12 - \$2,000$
 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	<u>501,000</u>
Selling and administrative expenses	260,000
Operating income	<u>241,000</u>
Interest expense	2,000
Net income	<u><u>\$ 239,000</u></u>

Annotations with arrows pointing to the table:

- Sales Budget.** points to the Sales line item.
- Ending Finished Goods Inventory.** points to the Cost of goods sold line item.
- Selling and Administrative Expense Budget.** points to the Selling and administrative expenses line item.
- Cash Budget.** points to the Net income line item.

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

Current assets

Cash	\$	49,000
Accounts receivable		
Raw materials inventory		
Finished goods inventory		
Total current assets		

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

Property and equipment

Land		50,000
Equipment		<u>367,000</u>
Total property and equipment		<u>417,000</u>

Total assets \$ 564,550

Accounts payable	\$	28,400
Common stock		200,000
Retained earnings		<u>336,150</u>
Total liabilities and equities		<u><u>\$ 564,550</u></u>