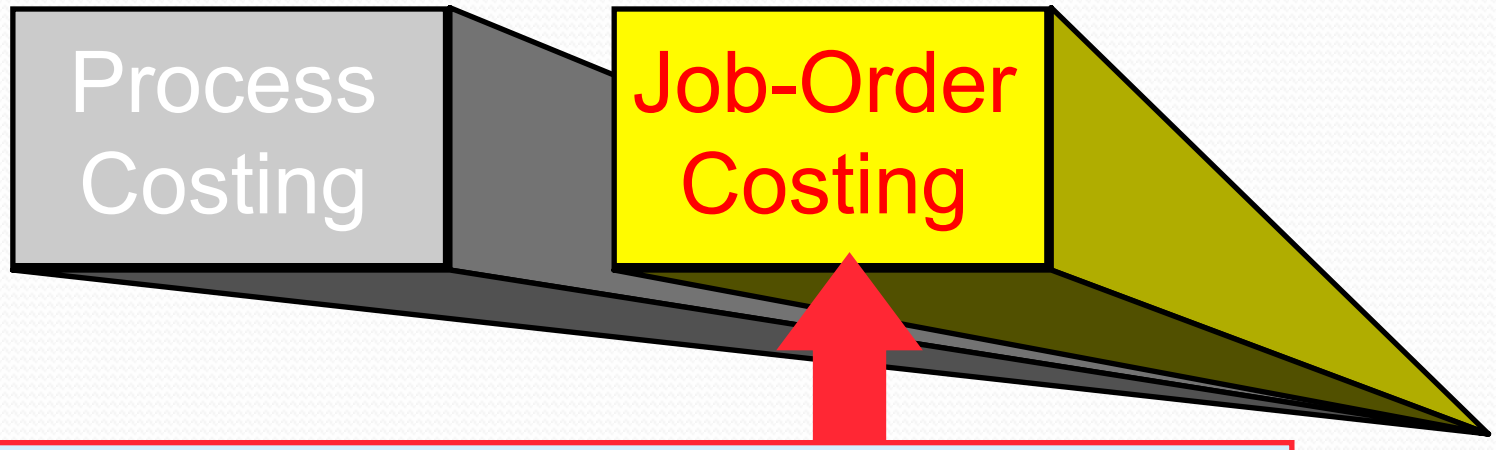
CHAPTER 3

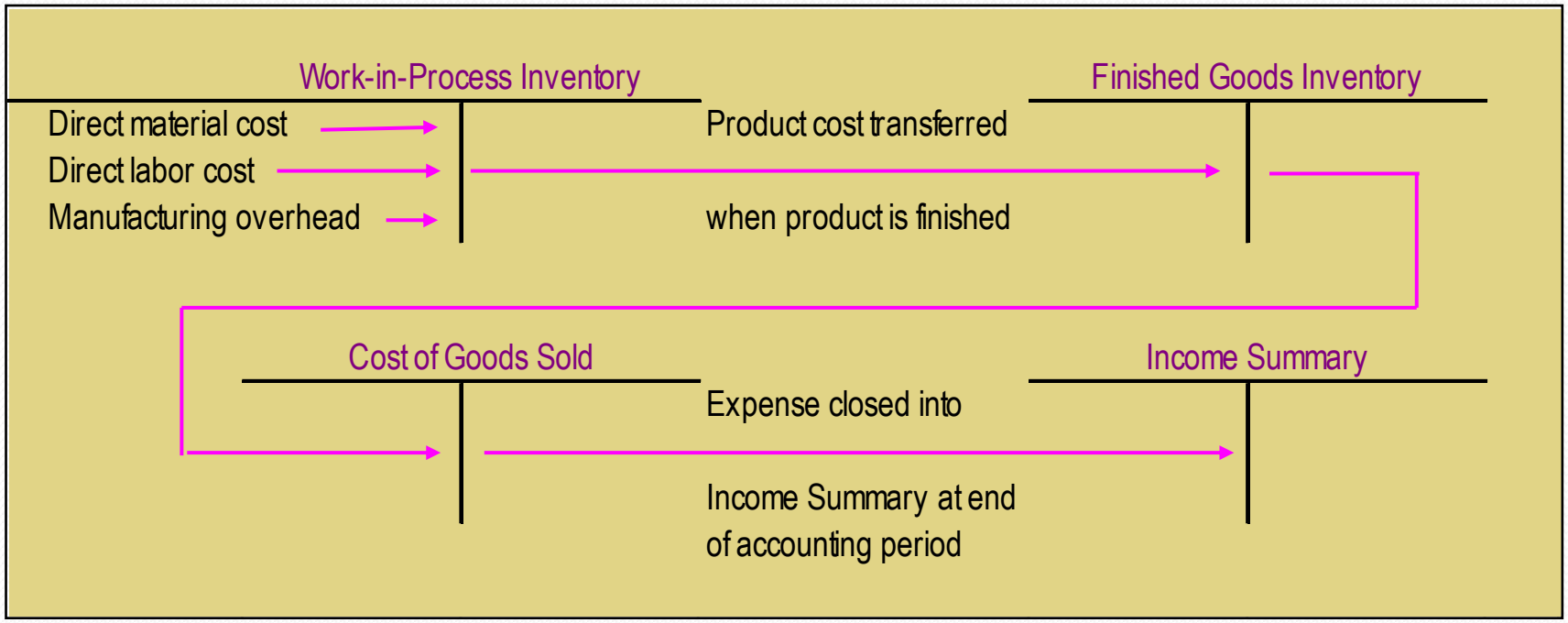
Job Costing Systems

Types of Product-Costing Systems

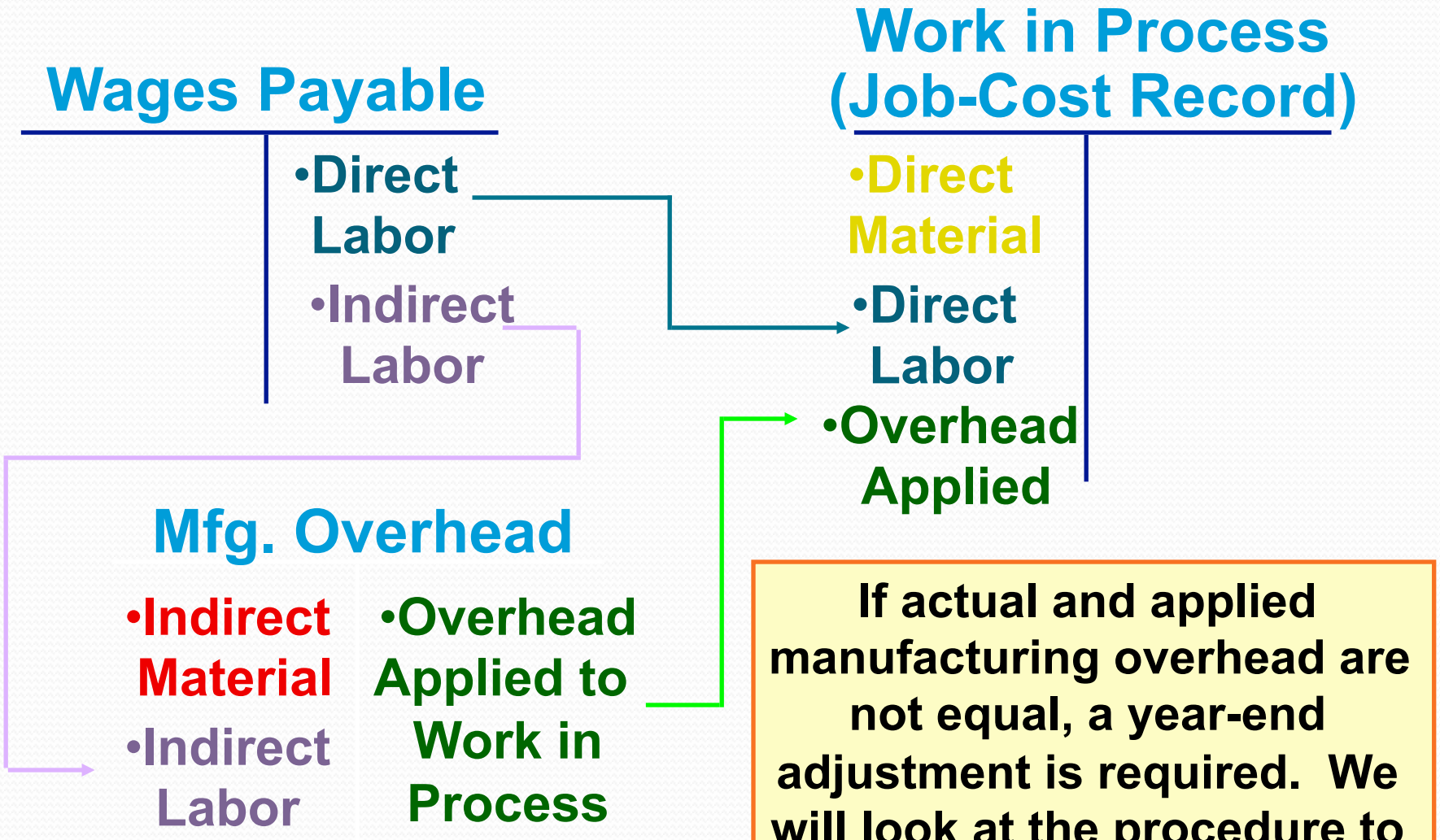


- **Used for production of large, unique, high-cost items.**
- **Built to order rather than mass produced.**
- **Many costs can be directly traced to each job.**
- **TWO TYPES:**
  - **Job-shop operations**
    - **Products manufactured in very low volumes or one at a time.**
  - **Batch-production operations**
    - **Multiple products in batches of relatively small quantity.**

Flow of Costs in Manufacturing Firm

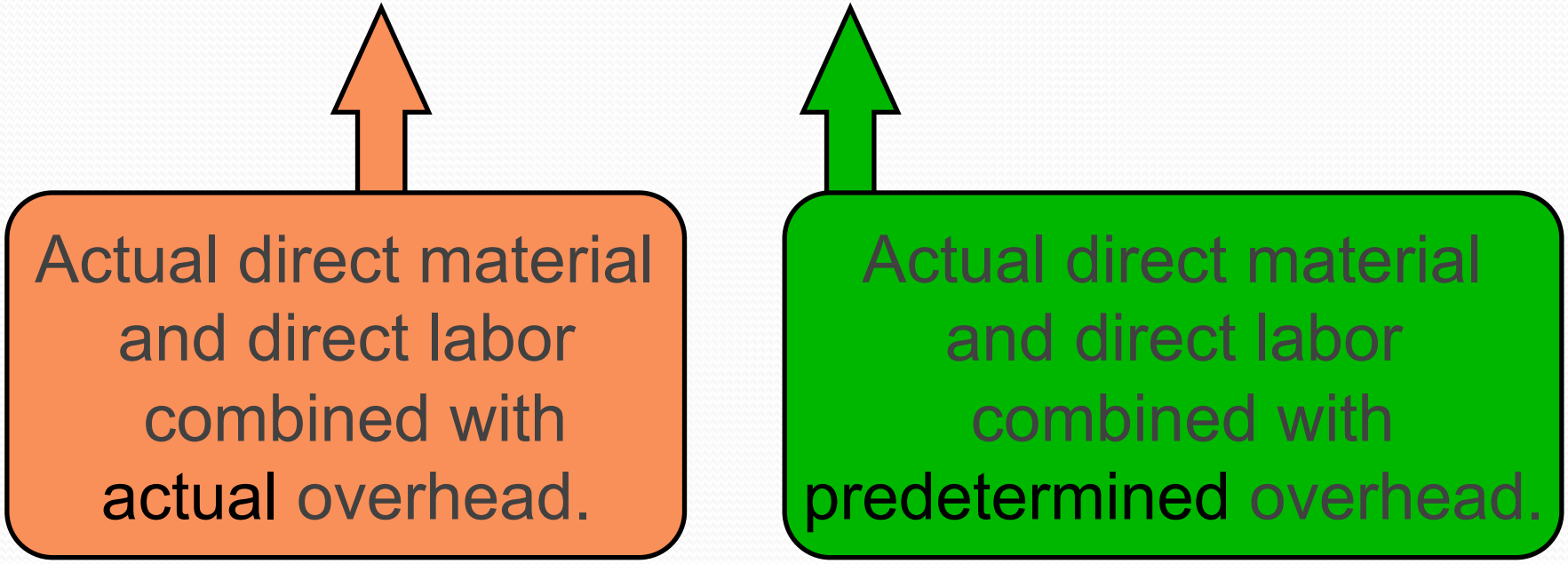


Job-Order System Cost Flows



If actual and applied manufacturing overhead are not equal, a year-end adjustment is required. We will look at the procedure to accomplish this later.

Actual and Normal Costing



Using a predetermined rate makes it possible to estimate total job costs sooner.

Actual overhead for the period is not known until the end of the period.

Manufacturing Overhead Costs

Overhead is applied to jobs using a predetermined overhead rate (POHR) based on estimates made at the beginning of the accounting period.

$$\text{POHR} = \frac{\text{(1) Budgeted manufacturing overhead cost}}{\text{(2) Budgeted amount of cost driver (or activity base)}}$$

$$\text{Overhead applied} = \text{POHR} \times \text{Actual activity}$$

Based on estimates, and determined before the period begins

Actual amount of the allocation base, such as direct labor hours, incurred during the period

Overapplied and Underapplied Manufacturing Overhead - Summary

If Manufacturing Overhead is . . .	Alternative 1 Allocation	Alternative 2 Close to Cost of Goods Sold
UNDERAPPLIED (Applied OH is less than actual OH)	INCREASE Work in Process Finished Goods Cost of Goods Sold	INCREASE Cost of Goods Sold
OVERAPPLIED (Applied OH is greater than actual OH)	DECREASE Work in Process Finished Goods Cost of Goods Sold	DECREASE Cost of Goods Sold

Costing Approaches Summarized

	Actual Costing	Normal Costing
Direct Costs	*Actual direct-cost rates* × actual quantities of direct-cost inputs	*Actual direct-cost rates* × actual quantities of direct-cost inputs
Indirect Costs	*Actual indirect-cost rates* × actual quantities of cost-allocation bases	*Budgeted indirect-cost rates* × actual quantities of cost-allocation bases

Three Methods for Adjusting Over/ Underapplied Overhead

- Adjusted Allocation Rate Approach – all allocations are recalculated with the actual, exact allocation rate.
- Proration Approach – the difference is allocated between Cost of Goods Sold, Work-in-Process, and Finished Goods based on their relative sizes
- Write-Off Approach – the difference is simply written off to Cost of Goods Sold

MinBad Company produces two small engines for model boats (engine A and engine B). Both products pass through two producing departments. Engine B is by far the more popular of the two engines. The following data have been gathered for these two products (see slides 2 and 3):

Required:

1. Compute the unit manufacturing product cost for each product using a plant-wide rate based on direct labour hours.
2. Compute the unit manufacturing product cost for each product using depart-mental rates. Use machine hours for department 1, and direct labour hours for department 2.
3. Compute the unit manufacturing product cost for each product using activity-Based costing.

Product Data

	Engine A	Engine B
Units produced per year	30,000	300,000
Prime costs	$ 100,000	$ 1,000,000
Direct Labour Hours	40,000	400,000
Machine Hours	20,000	200,000
Production runs	40	60
Inspection hours	800	1,200

Departmental Data

	Department 1	Department 2
Direct labour Hours:		
Engine A	30,000	10,000
Engine B	45,000	355,000
Total	75,000	365,000

	Department 1	Department 2
Machine Hours:		
Engine A	10,000	10,000
Engine B	160,000	40,000
Total	170,000	50,000

Departmental Data

	Department 1	Department 2
Overhead costs:		
Setup costs	$ 90,000	$ 90,000
Inspection costs	70,000	70,000
Power	100,000	60,000
Maintenance	80,000	100,000
Total	$ 340,000	$ 320,000