Accounting
Building Business Skills

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Chapter Thirteen:
Cost Accounting Systems

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Learning Objectives:

- Explain the characteristics and purposes of cost accounting systems.
- Describe the flow of costs in a job order cost system.
- Explain a job cost sheet and the accounting entries for a job order cost system.

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Learning Objectives:

- Describe the flow of costs in a process cost system.
- Prepare the accounting entries for a process cost system.
- Prepare a production cost report.
- Recognise the difference between traditional costing and activity-based costing.

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Learning Objectives:

- Identify the activity cost pools and activity drivers used in activity-based cost systems.
- Understand the benefits and limitations of activity-based costing.
- Differentiate between value-added and non-value-added activities.

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Cost Accounting Systems

- Measures, records and reports costs of products or services
  - total costs plus per unit cost
- Product cost accounting system:
  - includes manufacturing costs that are included in general ledger
  - used to value inventory (statement of financial position) and cost of goods sold (statement of financial performance)

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Cost Accounting Systems

- Also important for other types of business
  - for example: merchandising, service, mining, agricultural
  - both profit and non-profit organisations need information concerning product costs

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Cost Accounting Systems

- Direct Materials and Direct Labour – relatively easy to establish costs
- Overhead costs – costs accumulated then assigned as resources consumed
- Issues with assigning overheads:
  - relationships between resources used and products or services not always clear

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Cost Accounting Systems

- often single rate used as cost driver across entire factory (e.g. direct labour hours or machine hours)
- sometimes overheads assigned only to certain products or departments
- two basic systems used to allocate overheads – Job Order and Process

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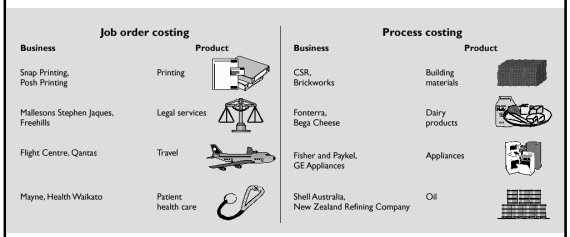
Cost Accounting Systems



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Cost Accounting Systems

- Job Order Costing:
  - each job can be distinguished from others
  - costs measured according to job (or batch), not according to set time periods

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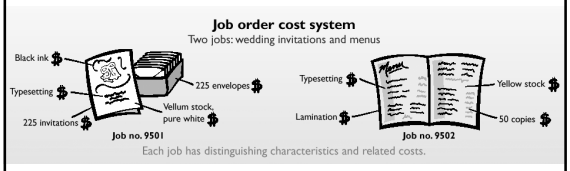
Cost Accounting Systems



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Cost Accounting Systems

- Process Costing:
  - production involves continuous process of similar items
  - costs assigned according to set periods of time, not according to specific jobs

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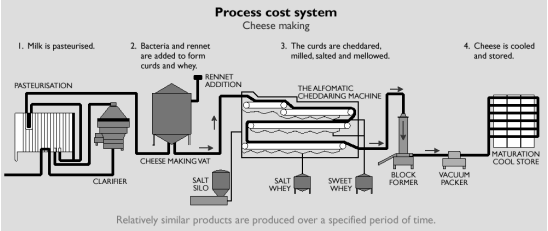
Cost Accounting Systems



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Job Order Costing

- Flow of costs reflects physical flow of materials
- Costs first accumulated in Raw Materials Inventory, Factory Labour and Manufacturing Overhead Control
- All manufacturing costs assigned to Work in Process Inventory account
- When job finished, costs transferred to Finished Goods Inventory account

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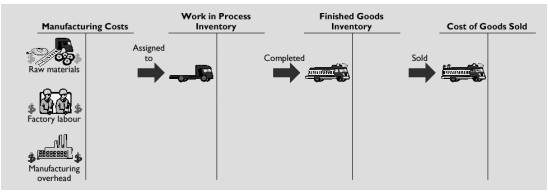
Job Order Costing

- When goods sold, costs transferred to Cost of Goods Sold account



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Job Order Costing

Flow of costs has two steps:

- accumulating costs to complete the work
  - costs not assigned to specific jobs yet
- assigning costs to the work done
  - as work completed, costs are attached to specific jobs

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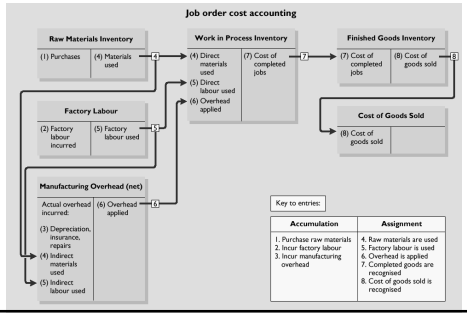
Job Order Costing



Job Order Costing

- Job cost sheets – records costs for specific jobs
  - Work in Process Inventory account = control account for several jobs
  - job cost sheets = subsidiary ledgers for Work in Process Inventory account
  - separate job sheet for each job
  - daily postings of costs from supporting documentation

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Job Order Costing

- Determining overhead rates – predetermined application rate
  - established at beginning of year
  - single figure used to apply overhead costs to jobs
  - enables estimated costs of overheads to be determined at any given time
  - requires estimated annual costs plus level of annual operating activity

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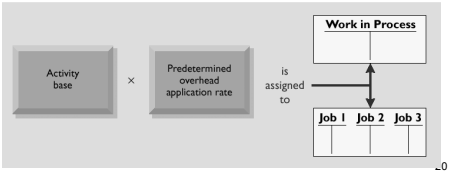
Job Order Costing



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Job Order Costing

Accounting procedures

- factory material costs – two stages:
  - as good purchased:
    Dr Raw Materials Inventory
    Cr Accounts Payable

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Job Order Costing

– to transfer costs into production:
Dr WIP Inventory (direct materials)
Dr Manufacturing Overhead Control (indirect materials)
Cr Raw Materials Inventory (total materials used)

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Job Order Costing

- factory labour costs:
Dr WIP Inventory (direct labour)
Dr Manufacturing Overhead Control (indirect labour)
Cr Factory Labour (total labour used)

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Job Order Costing

- manufacturing overhead – using predetermined overhead application rate to assign costs to products:
Dr WIP Inventory
Cr Manufacturing Overhead Applied

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Job Order Costing

- assigning costs to finished goods – when jobs finished, total costs accumulated in WIP are assigned to completed products:

  Dr Finished Goods Inventory
  Cr WIP Inventory

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Job Order Costing

- assigning costs to products as goods are sold – two stages:
  - to transfer costs to products sold:
    Dr Cost of Goods Sold
    Cr Finished Goods Inventory
  - to record sale:
    Dr Accounts Receivable
    Cr Sales Revenue

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Job Order Costing

- Reporting job cost data – to summarise cost data for all jobs manufactured and sold
  - prepare schedule of cost of goods manufactured
  - records direct materials and direct labour
  - plus manufacturing overhead costs applied (not actual costs incurred)

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Job Order Costing

- Under- or overapplied manufacturing overhead
  - overheads are allocated using predetermined rate
  - costs allocated may not equal actual costs
  - underapplied: assigned costs less than actual costs incurred
  - overapplied: assigned costs greater than actual costs incurred

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Job Order Costing

- end-of-period adjustment usually taken directly to Cost of Goods Sold:

Dr Manufacturing Overhead Applied
Cr Manufacturing Overhead Control

Dr or Cr Cost of Goods Sold
(as required)

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Job Order Costing

- Non-manufacturing business often use job order costing also, for:
  - contracts (advertising agencies, consulting firms)
  - cases (hospitals, lawyers)
  - projects (building firms)
  - programs (government agencies)

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Process Costing

- Used for large volumes of homogenous products manufactured in continuous processes
- Flow of costs does not follow specific jobs or batches
- Costs accumulated then assigned to Work in Process
  - like Job Order Costing

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Process Costing

- Different Work in Process Inventory accounts for different departments or stages of production
  - costs of units completed in one department are transferred to next department as goods move through manufacturing process

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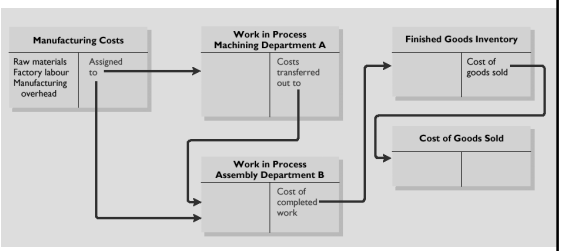
Process Costing



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Process Costing

Accounting procedures

- material costs – materials usually added to production at beginning of first process, then at varying times for subsequent processes:
  - Dr WIP – machining (for example)
  - Dr WIP – assembly
    - Cr Raw Materials Inventory

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Process Costing

- labour costs – also assigned to production according to stages of process:
  - Dr WIP – machining
  - Dr WIP – assembly
    - Cr Factory Labour

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Process Costing

- manufacturing overhead – cost drivers used to determine application rate should reflect activities involved:
  - Dr WIP – machining
  - Dr WIP – assembly
    - Cr Manufacturing Overhead Applied

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Process Costing

- assigning costs as goods move through production:
  Dr WIP – assembly
  Cr WIP – machining

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Process Costing

- assigning costs as production of goods is completed:
  Dr Finished Goods Inventory
  Cr WIP – assembly
- assigning costs as completed goods are sold:
  Dr Cost of Goods Sold
  Cr Finished Goods Inventory

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Process Costing

- Equivalent Units – measures work partially completed during the period
  – estimates are needed for degree of completion
  – expressed in terms of fully completed units

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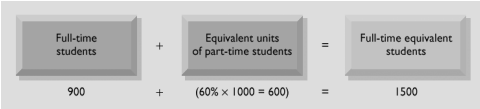
Process Costing

– weighted-average method used as basis for calculation



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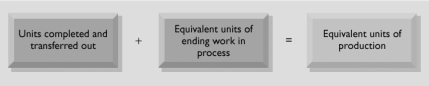
Process Costing

- Weighted-average method – for calculating equivalent units of production
  - widely used
  - considers degree of completion for both units completed and ending work in process inventory



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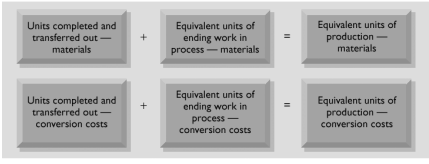
Process Costing

- Weighted-average method can be used for different stages of production
  - shows more detail



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Process Costing

- Reporting process costing data – to summarise cost data for each step of production
  - to evaluate productivity
  - to assess reasonableness of unit and total costs
- Four steps to calculate and report cost data:

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Process Costing

- Step One – calculate flow of physical units
- Step Two – calculate equivalent units of production
- Step Three – calculate unit production costs
- Step Four – prepare cost reconciliation schedule
  - *refer to Figure 13.23 for example*

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Activity-Based Costing (ABC)

- Decision-makers need to know costs of products or services as accurately as possible
- Direct materials and direct labour easiest costs to establish
- Overhead is not directly traceable to a product or service
  - thus overhead is assigned according to estimated costs and levels of activity

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Activity-Based Costing (ABC)

- Traditional cost drivers (e.g. direct labour) often not relevant
  - direct correlation between activity and overhead no longer exists
  - Total overhead costs increasing (e.g. depreciation on expensive equipment, power)
  - complex manufacturing processes may require multiple allocation bases

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Activity-Based Costing (ABC)

- Two steps to ABC:
  - allocate overhead costs to multiple activity cost pools
  - each cost pool assigned to products according to different cost drivers
- Note: total overhead costs do not change
  - only basis for allocation of these costs

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Activity-Based Costing (ABC)

- Activity – event, action, transaction or work sequence causing costs to be incurred
- Cost driver – any factor or activity that has direct cause-effect relationship with resources consumed (costs incurred)

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Activity-Based Costing (ABC)

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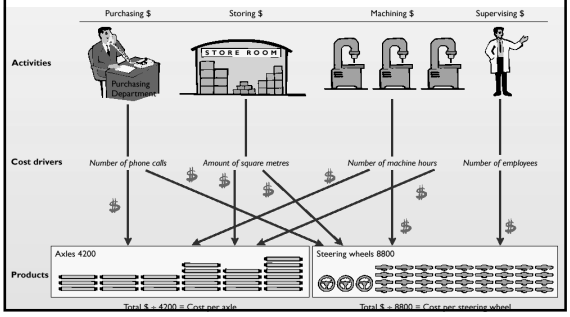
Activity-Based Costing (ABC)



Activity-Based Costing (ABC)

- Benefits – more accurate costing:
  - overhead costs assigned more directly, on the basis of activities that relate to the products
  - better control of overhead costs as managers more aware of their responsibilities
  - better management decisions (selling prices more appropriate, make-or-buy decisions more accurate)

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Activity-Based Costing (ABC)

- Limitations – not always useful:
  - can be expensive to identify multiple activities and apply various cost drivers
  - some arbitrary decisions will continue
  - cannot be used for external financial reporting

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Activity-Based Costing (ABC)

- Activity-based management extends ABC system to identify value
- Value-added activities – increase worth of product or service to customers
  - resources and costs consumed that customers are willing to pay for
  - e.g. design, machining, assembly, packaging

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Activity-Based Costing (ABC)

- Non-value-added activities – add costs or time to product or service, but do not increase market value
  - though may be necessary to the business
  - try to reduce where possible
  - e.g. inventory storage, building maintenance, bookkeeping, cleaning

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Activity-Based Costing (ABC)

- Hierarchy of activity levels – structure of activities and resources that may help in allocation of overhead costs
- Traditional costing techniques recognise volume-based unit-level costs
  - not all costs vary according to volume
  - e.g. machine set-up costs or personnel costs

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Activity-Based Costing (ABC)

- Four main levels:
  - units: performed for each single unit
  - batch: performed for each batch of units
  - product: performed for each product line, but not necessarily for each unit
  - facility: required to support or sustain production process

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Activity-Based Costing (ABC)

Four levels	Types of activities	Examples of costs
Unit-level activities		
	Machine-related: drilling, cutting, milling, trimming, pressing	Direct materials Depreciation of machines Power costs Machine maintenance
	Labour-related: assembling, painting, sanding, sewing	Direct labour Employee entitlements Payroll tax
Batch-level activities		
	Equipment set-ups Purchase ordering Inspection Materials handling	Labour set-up costs Purchasing clerical costs Quality control costs Materials handling costs

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Activity-Based Costing (ABC)

Four levels	Types of activities	Examples of costs
Product-level activities 	Product design Engineering changes Inventory management	Design costs Product engineering costs Inventory carrying costs
Facility-level activities 	Factory management Personnel administration Training Security	Building depreciation Heating, airconditioning Rates and taxes Insurance

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Activity-Based Costing (ABC)

- Service industries – same concepts as for manufacturing organisations
  - identify key activities that generate costs (cost pools)
  - classify into hierarchy of activity levels
  - identify cost drivers
  - identify activities as value-added or non-value-added

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