

UNIT OR OUTPUT COSTING

Unit or output costing is that method of costing in which cost are ascertained per unit of a single product in a continuous manufacturing activity. Per unit cost is calculated by dividing total production cost by number of units produced. This method is also known as single costing. This method is known as 'single costing' as industries adopting this method manufacture, in most cases, a single variety of product.

This method is also known as 'unit costing', as not only the cost of the total output, but also the cost per unit of output is ascertained under this method. Under this method cost units are identical. This method is also called 'output costing', as cost is ascertained for the total output of a product.

DEFINITION OF UNIT COSTING

- . According to J.R. Batliboi, “Unit costing or output costing may be defined as single or output cost system is used in business where a standard product is turned out and it is desired to find out the cost of a basic unit of production.”

DEFINITION

- According to Walter W. Bigg, “Unit Costing Method is a method of costing applied to ascertain the cost per unit of production where standard and identical products are manufactured.”

FEATURES OF UNIT COSTING

- Output costing has certain characteristics features.
- **The important features of output costing are:**
- (1) Output costing is the method of costing adopted in concerns where there is a production of single product or a few grades of the same product differing only in size, shape or quality by continuous process of manufacture. The units of production or output are identical and the costs of units are physical and natural.

FEATURES OF UNIT COSTING

- (2) Under this method, the cost per unit of output, say, per ton, per barrel, per kilogram, per metre, per quintal, per bag, etc. is ascertained. The cost per unit of output is ascertained by dividing the total cost incurred on a product during a given period of time by output produced during the period.
- Where the products manufactured are of different grades, first, the costs of products are ascertained grade-wise, and then the total cost of each grade of the product is divided by the number of units of that grade so as to ascertain the cost per unit of each grade of the product.



FEATURES CONTINUED

- Equality of cost is an important feature of this method. That is, under this method, cost units, which are identical, will have identical cost.
- (4) Under this method, the cost of product is ascertained at the end of the accounting period.
- (5) Under this method, the cost information relating to a product may be presented in the form of either cost sheet or production account.

FEATURES CONTINUED

- (6) This method is the simplest method of all the methods of costing; in the sense that the cost collection and the cost ascertainment are quite simple.
- (7) The cost per unit of output, determined under single. Costing enables the management to make real comparison between different periods and between different firms within the same industry, as the unit of output is a common factor between different periods and between different firms within the same industry.
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OBJECTIVES OF OUTPUT COSTING

- Output costing has the certain objectives.
- **They are:**
- (1) To ascertain the total cost of the output as well as the cost per unit of output.
- (2) To ascertain the profit or loss on production.
- (3) To analyse the expenditure by nature, classify them into element of cost and know the extent to which each element of cost contributes to the total cost.
- (4) To facilitate comparison of the cost of one period with the cost of another period to know the efficiency or otherwise of the production.
- (5) To facilitate the preparation of tender or quotation.
- (6) To control the cost of the product through comparative study of the costs of any two periods or through the comparison of the actual costs with the pre-determined standard cost.

Job costing introduction

- Job costing as a distinctive method costing is a form of specific order costing which is adopted to execute the work strictly according to customer's specification. The production process depends upon the number of orders received from customers. As such production is not standardised and intermittent in nature. The goods manufactured are not for stocking but for immediate delivery once it is complete in all respects.

Job costing

- The cost is ascertained separately for each job as every work order differs from customers to customers. The purpose of job costing is to ascertain the profit or loss made on each job. Further cost of job is compared with the estimated cost to indicate whether estimation was defective or the actual cost incurred is excessive. Such an analysis helps in taking remedial action to improve efficiency and also facilitate revision of estimates.

Definition

- According to Eric Kohler, “Job costing is a method of cost accounting whereby cost is compiled for a specific quantity of product, equipment, repair or other service that moves through the production process as a continuously identifiable unit, applicable material, labour, direct expenses and usually a calculated portion of the overhead being charged to job order.”

Features of job costing

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- **The characteristic features of job costing are:**
- (1) Job costing is adopted by manufacturing concerns as well as non-manufacturing concerns.
- (2) Those concerns which follow job costing method produce goods not for stock but against specific orders from customers.

Features continued ..

- (3) Job costing is adopted in concern where the work done is analysed into different jobs, each job being considered a separate unit of cost.
- (4) A separate account is opened for each job to which all expenses incurred on that job, from the date of commencement till the date of completion are debited. This will enable the concern to know the cost of each job.
- (5) Under job costing, the cost of each job is ascertained after the completion of the job.
- (6) As each job is different from other jobs, each job needs separate treatment under job costing.
- (7) By comparing the actual cost of each job against the price charged for each job, the profit or loss made on each job is ascertained.

Features and examples

- (8) Under this method, the cost of each job and the profit or loss made on each job undertaken is found out separately.
- (9) Under this method, production is intermittent and not continuous.
- (10) The industries need not incur selling and distribution expenses as the customers themselves come to place orders and collect the goods after production.
- Examples of industries which adopt job costing are—foundries, printers, machine tool making industries, engineering workshop, toy making concerns, furniture making concerns, management consulting concerns, interior decorations, musical instruments, advertising concerns and so on.

Objectives of job costing

- (1) The main objective of job costing is to ascertain the cost as well as the profit or loss on each job.
- (2) Another objective of job costing is to find out those jobs which are more profitable and those which are not profitable or less profitable.
- (3) Control of costs, by comparing actual costs with estimated costs, is also one of the objectives of job costing.
- (4) Job costing is also intended to indicate, through the comparison of actual cost of a job with its estimated cost, whether the estimation is incorrect or the actual cost is excessive.
- (5) Another objective of job costing is to provide a basis for estimating or determining the cost of similar jobs undertaken in future.

Specimen of job cost sheet / format

**SPECIMEN OF JOB COST SHEET
JOB COST SHEET**

Name of the Customer.....
Quantity on Order.....
Name of the Product.....

Job No.....
Date of Promised.....
Date of Commencement.....
Date of Completion.....

<i>Material Cost</i>			<i>Labour Cost</i>				<i>Overheads</i>		
<i>Date</i>	<i>Requisition No.</i>	<i>Amount</i>	<i>Date</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount</i>
		Rs.			Rs.	Rs.		Rs.	Rs.

SUMMARY OF COST

	Rs.	
Material Cost	
Labour Cost	
Direct Expenses	Prime Cost
Overheads (All)	Total Cost
Profit	Selling Price
	

Advantages of job costing

- **Job costing has the following advantages:**
- (1) It is helpful to ascertain the cost as well as the profit or loss on each job separately.
- (2) It helps the management to know about the profitability of the jobs.
- (3) It is best suited for cost plus contract.
- (4) It provides detailed analysis of the elements of cost which is quite useful for the preparation of cost estimates and quotations.
- (5) Under this method of costing, spoilage and defective jobs can be easily identified and responsibility for the same can be fixed on specific departments or individuals.
- (6) The data of the job costing are quite helpful in the preparation of future budgets.
- (7) The cost data relating to completed jobs is helpful to the management to know the trend of material, labour and overhead costs and to control the future job costs.

Disadvantages


- Job costing is not free from defects. It suffers from certain limitations.
- **They are:**
- (1) It involves more clerical work for cost collection. Further, it involves more supervision. These add to cost and make it costly.
- (2) Under this method of costing, costs are required to be collected for a large number of small jobs. So the chances of errors in cost collection are more in job costing.
- (3) Job costing, being historical in nature, cannot be of much help for cost control unless it is combined with estimated or standard costing.
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Contract costing

- Contract costing is a variant of job costing. Like job costing, contract costing is also a form of specific order costing. So, both job costing and contract costing are based on the same costing principles. In fact, a big order is termed as a contract and a small order as a job. Contract costing is also known as terminal costing as the preparation of Contract Account is terminated or closed after the completion of contract.
- Example of undertakings which adopt contract costing are builders, civil engineering contractors, road making or repairing concerns, dams and bridge constructional concerns. The person who undertakes the work to complete is known as 'Contractor' and the person who gets the work done through contractor is known as 'Contractee'.
- The Institute of Cost and Management Accountants (I.C.M.A.) London, defines contract costing as, "that form of specific order costing which applies where work is undertaken to customer's special requirements and each order is of long duration."
- "Contract or terminal costing is the term applied to the system adopted by those businesses which carry out substantial building or constructional contracts." —Walter W. Bigg

Features of contract costing

- (1) Contracts are generally of large size and, therefore, a contractor usually carries out a small number of contracts in the course of one year.
- (2) A contract generally takes more than one year to complete.
- (3) Work on contract is carried out at the site of contracts and not in factory premises.
- (4) Each contract undertaken is treated as a cost unit.
- (5) Separate Contract Account is prepared for each contract in the books of contractor to ascertain profit or loss on each contract.

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- 6) Most of the materials are specially purchased for each contract. These will, therefore, be charged direct from the supplier's invoices. Any materials drawn from the store are charged to contract on the basis of material requisition notes.
 - (7) Generally, all labourers are treated as direct labourers.
 - (8) Most expenses, such as, electricity, telephone, insurance, etc. are also direct in nature.
 - (9) Plant and equipment may be purchased for the contract or may be hired for the duration of the contract.

Features continued

- (10) Payments by the contractee are made at various stages of completion of the contract based on architect's certificate for the completed stage. An amount known as retention money is withheld by the contractee as per agreed terms.
- (11) Penalties may be incurred (paid) by the contractor for failing to complete the work within the agreed period.
- (12) Contract costing is less detailed and simpler than job costing.
- (13) Each contract or work involved in contract costing is executed or done as per the specifications given by the contractee. So one contract may be dissimilar to another contract.
- (14) Contract costing is concerned with the costing of construction work or repair work and not with the costing of any goods.
- (15) As the contract is undertaken at the contractee's premises most of the items of cost chargeable to a contract are direct costs. Indirect costs are very few.
- (16) As the contract or work is done at the contract site far away from the premises of the contractor, the problem of cost control is greater in the case of contract costing. There can be loss of materials and equipment, damage to plants and wastage of labour, posing problem of cost control.
- (17) In the case of contract costing, work commences on receipt of order from the customer.
- (18) In case of complete contract, there is the problem of determination of the amount of profit to be carried to current year's Profit and Loss Account, and the amount of profit to be carried forward.

Procedure of contract costing

- **The basic procedure for costing of contracts is as follows:**
- **1. Contract Account:**
- Each contract is allotted a separate number and a separate account is opened for each contract.
- **2. Direct Costs:**
- Most of the costs of a contract can be allocated direct to the contract. All such direct costs are debited to the Contract Account.
- **Direct costs for contract include:**
- (i) Direct cost of materials,
- (ii) Direct labour and supervision,
- (iii) Direct Expenses,
- (iv) Depreciation of Plant and Machinery,
- (v) Sub-contract costs, etc.

Procedure of contract costing

- **3. Indirect Costs:**
- Contract cost is also debited with overheads which tend to be small in relation to direct costs. Such costs are often absorbed on same arbitrary basis as a percentage on prime cost, or material or wages, etc. Overheads are normally restricted to head office and storage costs.
- **4. Transfer of Materials or Plant:**
- When materials, plant or other items are transferred from the contract, the Contract Account is credited by that amount.
- **5. Contract Price:**
- The Contract Account is also credited with the contract price. However, when a contract is not complete at the end of financial year, the Contract Account is credited with the value (cost) of work-in-progress as on that date. Work- in-progress includes value of work certified and the cost of work uncertified.

Procedure

- **6. Profit or Loss Account:**
- The balance of Contract Account represents profit or loss which is transferred to Profit and Loss Account. However, when contract is not completed within the financial year, only the part of the profit arrived is taken into account and the remaining profit is kept as reserve to meet any contingent loss on the complete portion of the contract.
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Procedure

- **Computation of Profit or Loss on Contract:**
- There may be three situations in the computation of profit or loss on contracts.
- **They are:**
- (I) Profit on completed contracts,
- (II) Profit on uncompleted contracts,
- (III) Profit on likely to be completed contracts.



- **Profit on Completed Contracts:**

- If a contract is begun and completed in the same financial year, then, the entire profit or loss made on such a contract should be transferred to the Profit and Loss Account. If there is profit, the same should be credited to the Profit and Loss Account and debit should be given to Contract Account. On the other hand, if there is loss, the same should be debited to the Profit and Loss Account and credit being given to the Contract Account.

- **Profit on Uncompleted Contracts:**

- Contracts which are started and finished during the same financial year create no accounting problems. But in case of those contracts which take more than one year to complete, a problem arises whether profit on such contracts should be worked out only on the completion of the contract or at the end of each financial year on the partly completed work. If profit is computed only on the completion of the contract, profit will be high in the year of completion of the contract, where as in other years of working on contract, profit will be nil.
- This would result not only distorted profit pattern but also higher tax liability because income-tax at higher rates may have to be paid. Therefore, when contracts extend beyond a year, it becomes necessary to take into account the profit earned or loss incurred on the work performed during each year. This helps in avoiding distortion of the year-to-year profit trend of the business.

- **There are two aspects of the profit computation:**
- (1) Computation of notional profit or estimated profit, and
- (2) Computation of the portion of such profit to be transferred to Profit and Loss Account.
- The portion of the notional or estimated profit to be transferred to Profit and Loss Account depends upon the stage of completion of the contract. Prudence requires that the total notional profit should not be transferred to Profit and Loss Account but a portion of it should be withheld as a reserve to meet any unforeseen future expenses or contingencies.

Rules in contract costing

- **1. First Rule:**
- When work certified is less than $\frac{1}{4}$ of the contract price, no profit is transferred to Profit and Loss Account. This is based on the principle that no profit should be taken into account unless the contract has reasonably advanced.
- **2. Second Rule:**
- When work certified is $\frac{1}{4}$ or more but less than $\frac{1}{2}$ of the contract price, then generally $\frac{1}{3}$ of the profit is transferred to Profit and Loss Account. The balance amount is treated as reserve. Thus, profit to be transferred to Profit and Loss Account is computed by the following formula –

- **third Rule:**

- When work certified is $\frac{1}{2}$ (i.e. 50%) or more but less than $\frac{9}{10}$ (i.e. 90%) of the contract price, then the profit to be transferred to Profit and Loss Account is computed by the following formula –

- **4. Fourth Rule:**

- When contract is near completion then the estimated profit should be calculated on the whole contract. The proportion of estimated profit to be transferred to Profit and Loss Account is computed by any one of the following formulas:

Format of rule 4

1. Profit = Estimated Profit $\times \frac{\text{Work Certified}}{\text{Contract Price}}$
2. Profit = Estimated Profit $\times \frac{\text{Work Certified}}{\text{Contract Price}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$
3. Profit = Estimated Profit $\times \frac{\text{Cost of Work to Date}}{\text{Estimated Total Cost to Work}}$
4. Profit = Estimated Profit $\times \frac{\text{Cost of Work to Date}}{\text{Estimated Total Cost of Work}} \times \frac{\text{Cash Received}}{\text{Work Certified}}$

Note : Of these conventional formulas, the first formula is commonly adopted. So students are advised to follow the first formula, unless they are otherwise instructed.

Rules of contract costing

- **5. Fifth Rule – Loss on Uncompleted Contracts:**
- In the event of a loss on uncompleted contracts, this should be transferred in full to the Profit and Loss Account. Whatever be the stage of completion of the contract.
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Process costing

- Process costing is probably the most widely used method of cost ascertainment. Process costing refers to a method of accumulating cost of production by process. It is used in mass production industries producing standard products like steel, sugar, chemicals, oil, etc. In all such industries, goods produced are identical and all factory processes are standardised.
- Output in such industries consists of like units and every unit of product undergoes similar operation in the process. So it is implied that the same cost of material, labour and overhead is charged to each unit of product processed. Under this method, costing an individual unit is impossible.

Process costing

- Process costing is so called because, under process costing cost of the product is ascertained process wise. Process costing is also known as 'Continuous Costing', because industries which adopt process costing undertake production of goods on a continuous basis. Process costing is also known as 'Average Costing', because the cost per unit of each process is ascertained by averaging the expenditure incurred on that process during a period by the number of units produced in that process during the period.

Definition of process costing

- 1 According to Wheldon, “Process costing is a method of costing used to ascertain the cost of product at each process, operation or stage of manufacture.”
- 2. According to B. K. Bhar, “Process costing refers to costing of one or more processes involved while converting a raw material to finished product.”
- 3. According to Sharles, “Process Cost Accounts are applied to concerns which produce a commodity that has to go through several processes and which requires to know the cost of each process.”

Characteristics of process costing

- (1) The production of goods is continuous, except where the plant is shut-down for repairs, until the final product.
- (2) The finished product is the result of two or more processes.
- (3) The product of the first process becomes the raw material for the second process and so on.
- (4) Each process is distinct and is pre-determined.
- (5) Costs are accumulated by processes.
- (6) The products are standardised and homogeneous.



Characteristics continued

- (7) It is not possible to distinguish finished products while they are in the stage of processing.
- (8) The cost of production of one process is transferred to subsequent process or processes just as output on one process is transferred as input of other process.
- (9) It is quite common to incur normal loss and wastage. Sometimes, owing to abnormal conditions even abnormal loss is also observed.
- (10) The production of main product is often accompanied by secondary products which are termed as joint and by-products.
- (11) The semi-finished products are expressed in terms of complete products. This is technically termed as equivalent production.
- (12) The production is undertaken on a continuous and large scale basis in anticipation of demand.

Characteristics continued

- (13) Cost of production is ascertained at each process and finally after completion of production.
- (14) The production process is pre-determined and a definite sequence of production is followed. The raw material and work-in-progress flow from process to process according to the sequence of production.
- (15) Some loss of materials in process (due to chemical action or evaporation, etc.) is unavoidable.
- (16) The cost per unit produced is the average cost which is calculated by dividing the total process cost by the number of units produced.
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Elements of process costing

- **Elements of Process Cost Accounting:**
- **Under process costing, the cost of materials, labour, direct expenses and overheads are collected as follows:**
- **(1) Materials:**
- Raw materials and sundry supplies required for each process are obtained from stores through stores requisitions. So, the costs of materials and sundry supplies chargeable to any process can be ascertained from stores requisitions.
- In case, the materials are issued in bulk to any process, the process concerned intimates to the cost office the exact quantity of materials consumed in the process during the particular period, and with the help of this data, the cost of materials chargeable to the process is ascertained.

Elements of process costing

- **(2) Labour:**
- Wages paid to workers engaged in a particular process are ascertained through the pay-rolls maintained for the concerned process, and are allocated directly to the process concerned.
- However, where workers are engaged in two or more processes, their wages, ascertained through the relevant wage records, are apportioned among the different processes on the basis of time spent.
- **(3) Direct Expenses:**
- All direct expenses incurred on a particular process are directly allocated to that process. Overheads incurred on two or more processes are apportioned on the basis of direct wages or on any other suitable basis. Sometimes overheads are recorded at pre-determined rate based on direct wages, prime cost, etc.

Elements continued...

- Overheads incurred on two or more processes are apportioned on the basis of direct wages or on any other suitable basis. Sometimes overheads are recorded at pre-determined rate based on direct wages, prime cost, etc.

Principles of process costing procedure

- **The essential stages in process costing are:**
- (1) The factory is divided into a number of processes and an account is maintained for each process.
- (2) Each Process Account is debited with material cost, labour cost, direct expenses and overheads allocated or apportioned to the process.
- (3) The output of a process is transferred to the next process in the sequence. In other words, finished output of one process becomes input (materials) of the next process.
- (4) The production records of each process are kept in such a way as to show the quantity of production and the wastage and scrap and the cost of production of each process for each period.

Process costing procedure continued

- (5) In some cases the whole output of one process is not transferred to the next process. A part of the output may be transferred to the next process, and a certain portion of the output may be sold in semi-finished form or may be kept in stock and transferred to Process Stock Account. If output of any process is sold at a profit in semi-finished form, then profit on that particular sale will be shown in the debit side of that concerned profit, as profit on goods sold or transferred.
- (6) In case there is loss or wastage of units in any process, the loss has to be borne by the good units produced in that process, and as a result, the average cost per unit increases to that extent.
- It may be noted that, if there is loss or wastage in any process, the quantity of loss or wastage should be entered on the credit side of the concerned Process Account in the quantity column. In case the wastage has some scrap value, it should appear in the credit side of the concerned Process Account in the value column against the entry for wastage. But, if the scrap value of the wastage is not specifically given in the problem, it should be taken as nil.
- (7) The total cost of production of each process for a particular period is divided by the number of units produced in that process during that period, and the average cost per unit of production for a period is obtained.
- (8) The finished output of the last process is transferred to the Finished Goods Account.

Advantages of process costing

- **Process costing has the following advantages:**
- (1) Process costing helps in the computation of costs at shorter intervals, which is usually a week, a fortnight or a month.
- (2) It helps in the computation of costs of processes as well as the finished product.
- (3) The computation of costs under process costing involves less clerical work and expenses.
- (4) The computation of costs per unit at any one process is very easy, as the units are homogeneous, and as such, the cost per unit can be found out easily by averaging.
- (5) It ensures a chooser control over production and costs.
- (6) It is easy to quote tender price because of standardised process.
- (7) Control can be exercised through standard costing technique and it is possible to evaluate the performance of every process.
- (8) Because cost of production is ascertained periodically, management is in a position to receive various reports periodically and review the progress and efficiency of the production process.
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Disadvantages of process costing

- (1) When costs are recorded at the end of the period, it is not possible to exercise control over costs.
- (2) It is difficult to apportion total cost among joint products and bye-products.
- (3) Under this method of costing, it is difficult to value work-in-progress.
- (4) It is difficult to value losses, wastes and scraps, under this method of costing.

Disadvantages of process costing

- 5) There is also the difficulty of ascertaining the value of closing stock where output of one process is transferred to another process at market price.
- (6) The costs available under process costing are historical costs. The historical costs are not of much use for managerial control.
- (7) This method provides the average cost per unit and the average cost per unit is not always accurate. As such, the average cost is not of much use for the purpose of detailed analysis and operating efficiency.
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