CORPORATE FINANCE & ACCOUNTING FINANCIAL ANALYSIS

Idle Time

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What is Idle Time?

Idle time is paid time that an employee, or machine, is unproductive that is a result of factors that can either be controlled or uncontrolled by management. It normally applies to full-time workers rather than consultants who typically have to bill for every hour of their time.

Idle time may have serious implications for employers. According to a 2018 study from the Harvard Business School, 78.1% of workers find themselves on a weekly basis with involuntary idle time, which costs employers an estimated $100 billion per year, as per the Harvard study.

Understanding Idle Time

Idle time is the time associated with employees waiting, or when a piece of machinery cannot be used. Idle time could also be associated with computing, and in that case, refers to processing time. Idle time can be classified either as normal or abnormal.

KEY FACTORS

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Idle time can be classified either as normal or abnormal.

Minimizing idle time is key if a business wants to maximize efficiency over long periods of time.

Normal Idle Time

Normal idle time is categorized as "downtime" for regular maintenance and repair. Regularly scheduled downtime for manufacturing assets is a normal business practice and cannot be controlled by management.

Abnormal Idle Time

Abnormal idle time, such as a worker strike, can be controlled by management. Time management is extremely important in any business, but particularly in a business with high fixed costs. Idle machinery or equipment generates depreciation expenses and also reduces output productivity.

Idle Time = Total Time spent by a worker – Actual Time spent on production.

Causes of Idle Time:

There are three causes, viz.,

(a) Administrative Causes,

(b) Production-related Causes and,

(c) Economic Causes.

(a) Administrative Causes:

These are:

(i) Appointing skilled workers in anticipation of future growths.

(ii) Unwilling to discharge skilled worked during depressions.

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(b) Production-related Causes:

These are:

(i) Breakdown of Plant/Machinery.

(ii) Waiting for work/raw materials/machines.

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(iii) Lack/inadequate of power facility.

(iv) Waiting for instruction from superiors/supervisors.

(c) Economic Causes:

These are:

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(i) Cyclical fluctuations for which demand of the product reduces.

(ii) Demand for seasonal product decrease during off-season.

(iii) General recession in economy.

(iv) Fall in demand as a result of strike/lock-out, etc.

Types of Idle Time:
1. Normal Idle Time:

Normal idle time is unavoidable loss of labour hours arising out of usual course of business.

It includes:

(i) Tea break, lunch break or time lost from factory gate to actual place of work;

(ii) Time lost during the period between finishing of one job starting of another one;

(iii) Setting the machines/tools or implements;

(iv) Time lost for overcoming fatigue.

To some extent some of the above idle time may be controlled. Cost of normal idle time should be charged to factory overheads. But if it is found that a particular department is responsible for such loss, the cost of idle time should be charged to that particular department.

Cost of normal idle time should be charged to cost of production simply by inflating the hourly rate of wages, e.g. if idle time is considered as 10% of total labour hours and wages are paid for 8 hours Rs. 288, Cost of labout p.h. in that case will be = Rs. 288/7.2 hrs = Rs. 40 per hour.

2. Abnormal Idle Time:

Abnormal Idle Time is that time the wastage of which can be avoided if adequate precautions are taken.

Some of them are:

(i) Breakdown of machinery;

(ii) Power failure;

(iii) Non-availability of materials;

(iv) Strikes and lockout;

(v) Fire, Flood and other hazards;

(vi) Bottlenecks in production;

(vii) Stoppage of work as a result of bad policy decisions by the management;

(viii) Excessive time taken to rectify the defects;

(ix) Excessive automation, etc.

Methods of Wage Payment to Workers in Cost Accounting!

The remuneration paid to employees should reduce labour turnover, increase productivity of employees and improve the quality of output.

There are two basic methods of wage payment:

(1) Payment made on the basis of time spent by the workers in the factory irrespective of output produced.

(2) Payment of wages on the basis of production or work done irrespective, of time taken by the worker.

These methods of wage payment are respectively called time wages and piece wages.

(A) Time Rate System:
Under this method the workers are paid on the basis of hourly daily, weekly or monthly rate.

There are five variations of time wages which are as follows:

(1) Flat time rate.

(2) High day rate.

(3) Measured day rate.

(4) Graduated time rate.

(5) Differential time rate.

(1) Flat Time Rate:

Under this method workers are paid at a single rate on the basis of the time they are employed. The flat rate may be per hour, per day or per week or on monthly basis. The earnings of employees depend on total time they spend in the factory. The flat rate is decided on the basis of rates prevailing in the locality where the industry is situated.

This flat rate is suitable for highly skilled workers, unskilled workers and apprentices. It is suitable in the under mentioned types of work.

(1) Where high quality goods are being produced.

(2) Where production is mechanised and involves high speed.

(3) Situations where output cannot be measured.

(4) Where effective and close supervision is possible.

(5) Where incentive schemes cannot be introduced as the workers may not be directly involved with the final output.

Time rate is simple and easy to calculate. The worker is assured of payment for time spent in the factory.

However, this method has the following disadvantages which far outweigh its advantages:

(1) Employees are not rewarded on the basis of merit as both inefficient and efficient workers are paid at the same rate.

(2) Employees are paid wages for idle time also, since they are not paid on the basis of output.

(3) The labour cost per unit does not remain, constant as the output ‘fluctuates and this makes it difficult to prepare tenders or quotations.

(4) Supervision cost may go up as strict supervision is essential to get the work done.

(5) The workers may go slowly on work to create scope for overtime which doubles the labour cost.

To conclude the flat time rate does not recognise effort and it is not helpful in increasing output.

(2) High Day Rate:

This method is introduced to attract skilled workers by offering the highest wages in the industry. This method also intends to remove the draw backs of flat time rate which does not provide incentive for efficiency. High rate is paid to employees to achieve, present targets of output. The target or standard output fixed is at high level which only a skilled worker can achieve.

When high rate of wages are paid, overtime work is not permitted. High day rate reduces the labour cost and over-head cost per Unit with the help of high output. This method will be successful only if efficient workers cooperate in achieving high standards of output.

(3) Measured Day Rate:

Under this method of time wages the workers are given a particular work to be performed and the rate is fixed on the basis of the level of performance of specified work. This gives incentive to workers to get paid at high rate for high performance. The main drawback of measured day rate is that the workers are not paid any additional remuneration for any improvement in the level of performance originally specified.

(4) Graduated Time Rate:

Under this method the wage rate is fixed by linking it with cost of living index. The rate of wages goes on changing with change in cost of living index. During the period of rising prices the workers find it helpful as they are compensated for increased prices.

(5) Differential Time Rate:

This method recognises individual efficiency and skill. The workers in the same group will be paid at different rates. High rates-are paid for efficient workers and lower rates are paid for inefficient workers. There is positive incentive offered for improvement of performance.

(B) Piece Rate System:
This is also called ‘payment by results’. The workers are paid on the basis of output produced by them. The earnings of the workers depend on the number of units of output produced and the wage rate per unit received by the worker. The payment by results system is successful only if the work is of repetitive nature.

The effect of piece rate is that the remuneration is at constant rate and labour cost per unit remains stable throughout the range of output. The total cost per unit decreases considerably on account of reduction in the fixed overhead per unit for increased volume of production.

Variations of Piece Wages:

There are four variations of piece wages.

They are as under:

(I) Straight Piece Rate.

(II) Differential Piece Rate.

(1) Taylor's differential piece rate system.

(2) Merrick's multiple piece rate system.

(3) Gantt's task and bonus plan.

(I) Straight Piece Rate:

Under straight piece rate system workers are paid according to the number of units produced at a fixed rate per unit.

Advantages:

(1) Employees are paid according to merit as the efficient workers earn more wages as their output is more. In this way it distinguishes between efficient and ordinary workers.

(2) Piece rate acts as incentive to induce the workers to produce more.

(3) Higher output brings down the cost per unit and increases the profit margin of employers.

(4) Under this method employer has no worries about payment for idle time and more over it reduces idle time, thus ensuring effective usage of available time.

(5) Submitting of tenders does not create any difficulty as the labour cost per unit is constant.

(6) Machinery and tools are taken care of by the workers as they are aware that the defects or breakdown will reduce their chances of higher production and higher wages.

(7) The supervision cost is low. It is in the workers interest to work sincerely and close supervision is not required.

(8) There is inducement or encouragement to average workers also to produce more and earn more wages.

Disadvantages:

(1) Fixing of straight piece rate is difficult. If low piece rate is fixed it will frustrate the workers. Thus, ‘equitable piece rates’ are to be fixed to induce the workers.

(2) Flat piece rate being uniform piece rate paid to the employees irrespective of level of output, it may not induce efficient workers to produce more and reach higher levels of effectiveness.

(3) The wages of employees may reduce considerably due to the fault of employer or co-workers in many instances.

(4) In situations of declining demand for goods, the production may go on increasing, embarrassingly.

(5) Workers will always be aiming to produce more and in their anxiety may cause more accidents and undue haste and strain may prove to be injurious to the worker’s health.

(6) The workers’ anxiety for higher production may lead to more defectives, spoilage, and wastage of raw materials.

(II) Differential Piece Rates:

This is an improvement over straight piece rate to increase the performance of both efficient and inefficient workers. Two or more rates are offered to workers. Higher performance is paid at a higher rate and lower performance is paid at lower piece rate. In other words the increase in wages is in proportion to increase in production.

There are three types of differential piece rates:

(1) Taylor’s differential piece rate

(2) Merrick’s differential piece rate system (Multiple piece rate system)

(3) Gantt’ Task and Bonus plan.

(1) Taylor’s Differential Piece Rate System:

The ‘Father of Scientific Management’ F.W. Taylor has introduced this method.

Main features of the method are as under:

(a) Time wages or minimum wages are not guaranteed.

(b) Standard output is determined and standard time is fixed for the output, based on time and motion studies.

(c) Actual performance of workers is compared with the standard and the efficiency level of the performance is computed as percentage of the standard.

(d) Two piece rates are to be applied for computation of earnings of each worker.

'Low price rate' is applicable for below standard output.

'High piece rate' is applicable for output at or above standard.

For example – if standard output per hour is 10 units and high piece rate is Re. 1.20 per unit and low piece rate Re. 0.80 per unit, workers producing 10 units or more per hour are paid at Rs. 1.20 per unit and those who produce less than 10 units per hour are paid at Re. 0.80 per unit.

Though no rates are specified, high piece rate of 120% of the straight piece rate and low piece rate of 80% of the straight piece rate are usually employed.

This method is intended to reward efficient workers and penalise substandard workers. The assumption is that 'slow workers' also will try to improve and attain the standard to earn more.

This method was not popular due to its 'harsh' treatment of average workers and trade unions were against it because it does not guarantee time wages.

(2) Merrick's Multiple or Differential Piece Rate System:

This method is an improvement over Taylor's method. This method has three rates for different level of performance. Wages are paid at ordinary piece rate to those workers whose performance is less than 83% of standard output; 110% of the ordinary piece rate is given to workers whose level of performance is between 83% and 100% of the standard and 120% of the ordinary piece rate is given to workers who produce more than 100% of the standard output.

(3) Gantt's Task and Bonus Plan:

Under this method a standard time is fixed for a task to be performed by workers.

Actual time taken is compared with the standard time and efficiency is ascertained-

(1) Time wages are paid to the workers whose performance is below 100%, i.e., those who take more than the standard time.

(2) Time wages and 20% of lime wages as bonus are paid to those workers who take standard time to complete the job (whose performance is at 100%).

(3) Wages at high piece rate on the whole output are paid to the workers who take less than standard time (whose efficiency is above 100%).

Some authors have provided for 20% bonus over and above high piece rate for above standard workers. But an overwhelming majority of authorities concur with the rates given above and are used here.

Premium and Bonus Plans:

Premium plans are introduced to enhance the individual performance of workers. The workers are induced to show efficiency by performance of job in less than the standard time.

Under the premium plans, a standard time is fixed for a specific job or operation and the worker is paid for the actual time taken by him at hourly rate plus wages for a portion of the time saved as bonus. “A premium and bonus plan” is called “incentive plan” because the worker is provided incentive to earn more wages by completing the work in less time.

Factors to be taken into account in designing a premium plan (or) Factors Governing Incentive Schemes:

(1) The plan should be simple and easy for workers to understand.

(2) The plan should offer sufficient incentive to the workers.

(3) The standard time should be set on the basis of time and motion study and should be realistic.

(4) Standard time once fixed should remain for a long duration unless there are changes in the method of work.

(5) The system should increase production and lower the cost of production.

(6) The workers should have scope for higher earnings with each improvement in performance level.

(7) The quality of output is also to be maintained.

(8) The system should also benefit indirect workers.

(9) It should reduce labour turnover.

(10) The cost of operating the schemes should be minimum.

Premium Bonus Systems:

The following are some of the popular premium bonus systems:

(1) Halsey premium plan

(2) Halsey – Weir premium plan

(3) Rowan system

(4) Barth variable sharing plan

(5) Emerson's efficiency plan

(6) Bedaux point premium system, and

(7) Accelerating premium plan, etc.

(1) The Halsey Premium Plan:

This system is known as fifty-fifty plan. It was introduced by F.A. Halsey, an American engineer.

Under this method a standard time is fixed for the performance of each job; worker is paid for actual time taken at an hourly rate plus 50% of time saved as bonus:

Merits:

(1) It is simple to understand and easy to calculate.

(2) Standard time is fixed for each job.

(3) Both employer and employee get benefited equally from the time saved by the worker.

(4) Introducing this method is easy.

(5) It provides incentive for efficient workers. At the same time below average workers are not penalised.

(6) The time saved has the effect of reducing labour cost and overhead.

Demerits:

(1) Fixation of standard time, which is to be uniform is very difficult.

(2) If wage rates are low incentive value may be low.

(3) Earnings are reduced at high level of efficiency.

(2) Halsey-Weir Scheme:

Under this method the worker gets a bonus at 3 0% of time saved unlike 50% under Halsey plan. Except for this change, Halsey and Halsey-weir plans are similar.

(3) Rowan System or Rowan Plan:

This scheme was introduced in 1901 by David Rowan of Glasgow, England. The wages are calculated on the basis of hours worked whereas the 'bonus is that proportion of the wages of time taken which the time saved bears to the standard time allowed'.

Merits:

(i) Time wages are guaranteed to the worker.

(ii) It is suitable for learners and beginners.

(iii) Both the workers and employers are benefited.

(iv) It pays higher bonus to workers when compared with Halsey scheme upto a specific level of time saved.

Demerits:

(i) It is difficult to understand and calculate for the ordinary workers.

(ii) Efficiency beyond certain point is not rewarded.

(iii) The system is more complex and expensive.

(4) Barth's Variable Sharing Plan:

Under this scheme wages are not guaranteed. The earnings is calculated by multiplying the rate per hour by the geometric mean of standard hour and actual hours worked.

Thus,

(5) Emerson's Efficiency Plan:

Under this plan, a standard time is fixed for every job or work. Worker's output is measured as a percentage of the standard fixed. When a worker's efficiency reaches 66 2/3% of the standard, he becomes eligible to get bonus at given rate. The rate of bonus increases gradually when efficiency .percentage goes up from 67% to 100% of the basic time rate. For every additional 1% efficiency beyond 100%, additional bonus is 1 % of the time rate.

DIFFERENCE BETWEEN ALLOCATION AND APPORTIONMENT OF OVERHEADS
The difference between Allocation and Apportionment of overheads is as follows:

ALLOCATION OF OVERHEADS

Allocation is the process of identification of overheads with cost centers. An expense which is directly identifiable with a specific cost centre is allocated to that centre. Thus it is allotment of a whole item of cost to a cost centre or cost unit.

ACCORDING TO CHARTERED INSTITUTE OF MANAGEMENT ACCOUNTANTS, LONDON

"Cost Allocation is the charging of discrete, identifiable items of cost to cost centers or cost units".
The total overtime wages of workers of a department should be charged to that department. The electricity charges of a department if separate meters are there should be charged to that particular department only.

APPORTIONMENT OF OVERHEADS

Cost apportionment is the allotment of proportions of cost to cost centers or cost units. If a cost is incurred for two or more divisions or departments then it is to be apportioned to the different departments on the basis of benefit received by them. Apportionment is done in case of those overhead items which cannot be wholly allocated to a particular department. Common items of overheads are rent and rates, depreciation, repairs and maintenance, lighting, works manager's salary etc.

ACCORDING TO CHARTERED INSTITUTE OF MANAGEMENT ACCOUNTANTS, LONDON

"Apportionment of overheads is that part of cost attribution which shares costs among two or more cost centers or cost units in proportion to the estimated benefit received, using a proxy"
Difference Between Cost Allocation and Cost Apportionment
Last updated on August 28, 2019 by Surbhi S

Departmentalization can be understood as a process of creating departments such as machining, personnel, fabrication, maintenance, stores, accounts, etc., in an organization, for the purpose of allocation and apportionment of overheads in a convenient way. The term allocation of cost is concerned with the complete cost items, whereas the apportionment of the cost is all about the proportion of cost items.

Based on the relation of the cost item with the cost center or unit, to which it is imposed, the cost item is allocated or apportioned and not as per the nature of the expense.

Take a read of this article excerpt, in which you can find the fundamental differences between allocation and apportionment of cost.

Content: Cost Allocation Vs Cost Apportionment
Comparison Chart
Definition
Key Differences
Conclusion

Comparison Chart
BASIS FOR COMPARISON COST ALLOCATION COST APPORTIONMENT
Meaning Allocation of cost, implies the entire distribution of the overhead item to the departments on a logical basis. Apportionment of cost refers to distribution of various overhead items, in proportion, to the department on a logical basis.
Represents It represents that part of cost attribution, which charges a particular cost to a cost unit. It represents that part of cost attribution, which shares cost among multiple cost units, in the proportion of expected benefit received.
Distribution Directly assigned to the department. Proportionately assigned to different departments.
Application When the overhead belongs to a specific department. When the overhead belongs to different departments.
Under-Absorption and Over-Absorption of Overheads
Meaning:
The amount of overhead absorption in costs is the total amount of the overhead costs allotted to individual cost units by application of overhead rate. Overhead costs are fully recovered from production if actual rate method of absorption is adopted as the amount charged to production is equal to the amount of overheads incurred. But when a predetermined rate is used on the basis of budgeted overheads and the rate is applied to the actual base, the actual overhead expenses may be different from the charged or budgeted overhead expenses.

If the amount absorbed is less than the amount incurred which may be due to actual expenses exceeding the estimates and/or the output or hours worked being less than the estimates, the difference is known as under-absorption. Under-absorption of overheads thus means the amount by which the absorbed overheads fall short of the actual amount of overheads incurred. It represents understating the costs as the overhead expenses incurred are not fully recovered in the cost of jobs, processes etc.

On the other hand, if the amount absorbed is more than the expenditure incurred due to expenses being less than the estimates and/or the output or hours worked exceeding the estimates, it would mean over-absorption of overheads and will inflate the costs. Over-absorption of overheads thus means the excess of overheads absorbed over the actual amount of overheads incurred.

Suppose actual production overheads are Rs 3,38,000 and overheads recovered are Rs 3,24,480, then there will be under-absorption of Rs 13,520 (i.e. Rs 3,38,000 – 7 3,24,480). Suppose in the above case the overheads recovered are Rs 3, 48,000, then there will be over-absorption of Rs 10,000 (i.e. Rs 3, 48,000 – Rs 3, 38,000).

Causes of Under or Over-Absorption of Overheads:
Under or over-absorption of overheads may arise due to any of the following reasons:

(i) Error in estimating overheads:

The total overheads actually incurred for a department may be more or less than the amount estimated because of error in estimating. This may be due to deliberate decision in this regard or lack of proper control.

(ii) Error in estimating of proper volume:

The actual volume of output may be more or less than the output anticipated because of error in estimating the level of production.

(iii) The actual hours worked may be more or less than hours anticipated.

(iv) The basis upon which the factory overheads are recovered from production may no longer be correct on account of changes in the prices of material or wages rates.

(v) Work-in-progress might not have been charged with its share of overhead in cost accounts.

(vi) Major unanticipated changes in method of production might have occurred due to which an expense of a non-recurring nature might have been incurred during the year.

(vii) Seasonal fluctuations in the overhead expenses from period to period. Overhead rate is calculated by averaging the peaks and troughs. This results in under-absorption of overheads if the rate is calculated with reference to full capacity and under-absorption of overhead cost represents the overheads pertaining to the unutilized capacity.

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(viii) There may be some important changes in the work situation such as heavy overtime, introduction of another shift, substitution of manual labour by equipment etc.

Accounting of Under and Over-Absorbed Overheads:
The accounting treatment of under or over-absorption of overheads depends upon the extent of such under or over-absorption and the circumstances under which it arises. Following are the main methods of disposal of under or over-absorption of overheads.

(i) Use of Supplementary Rates:
If the amount of under or over-absorption is considerable; the cost of job or process is adjusted by means of supplementary levy of the overhead. Supplementary rate is calculated by dividing the amount of under or over-absorption by the actual base. Under-absorption is set right by the plus rate while over-absorption is adjusted by minus rate. The supplementary rate may also be calculated as a percentage of the amount absorbed.

Correction of overheads costs by a supplementary rate is nothing but recovering the overhead by actual rates. All the shortcomings of actual rate method will make the supplementary rate as unnecessary and add to the clerical expenses. When the overhead rate is linked with maximum attainable or normal capacity but other than actual capacity, then calculation of supplementary rate will defeat the purpose (i.e. to reveal the idle capacity) for which it is calculated.

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Supplementary rate is useless in those cases where in order to have a uniform charge of overhead throughout, the accounting period is fixed in order to avoid seasonal fluctuations in the overhead cost or level of activity.

Correction of costs through supplementary rate is necessary when the management likes to maintain actual historical costs for future comparison. Its use is made when prices are fixed on cost plus basis.

The amount of under or over-absorption at the end of the accounting period is adjusted in work-in-progress, finished stock and cost of sales in proportion to direct labour hours or machine hours or the values of the balances in each of these accounts by the use of

supplementary rate. Subsidiary records or individual items are not corrected. The amounts so adjusted will be shown in the Balance Sheet as deductions from or additions to the work-in-progress and finished goods stock.

Under this method, the profit for the period will be reduced or increased by the amount adjusted to cost of sales and value of stock will increase or decrease by the amount adjusted to work-in- progress and finished goods stock. The latter will affect the profit of the subsequent period.

(ii) By Writing Off to Costing Profit and Loss Account:
If the amount of under or over- absorption is small it may be written off to Costing Profit and Loss Account instead of calculating a supplementary rate by complicated procedure. Under-absorption due to idle facilities should be written off in this manner whatever the amount may be.

The amount of under or over-absorption at the end of accounting period is transferred to the Overhead Suspense Account which is ultimately transferred to the Costing Profit and Loss Account or directly to Costing Profit and Loss Account. If some portion of under or over-absorption arises due to abnormal causes such as strikes, lock-outs, major breakdown etc., then such portion should be carried over to the next year and is taken into account while fixing the rate for that period.

The main defect of this method is that it will distort the value of stock as the amount of under or over-absorption of overheads is directly transferred to Costing Profit and Loss Account and not allocated to the stock of work-in-progress and finished goods. The value of such stock will either be under or over-stated in the next accounting period. Under-absorption will reduce the profit of the concern by the same figure for the period.

(iii) Absorption in the Accounts in Subsequent Years:
The amount of under or over- absorption of overheads may be carried over as deferred charge or deferred credit to the next accounting period by transferring to a Suspense or Overhead Reserve Account. The use of this method is justified when the normal business cycle is more than one year and in the case of new projects and schemes when the output is low in the initial stages of production and cannot bear the entire share of overheads.

Under such circumstances, it is desirable that some portion of such cost be carried over to the next period to be absorbed in the production of subsequent years. One criticism which is generally levied against this method is that cost should be absorbed in the period in which it is incurred and utilised and should not be carried over to the next period for the purpose of absorption as it will distort the costs for the purpose of comparison.