COST ABSORBTION ACCOUNTING FOR SERVICE INDUSTRIES

Overview

In service industries, Cost Absorption Accounting is used to capture all costs associated with a particular activity and incorporate them into a single unit of output value. It includes all direct/variable and indirect/fixed cost overheads. In service type industries where materials are supplied, the unit cost may include the cost of materials but generally these are charged separately against a particular order. Cost absorption accounting is particularly useful in a Job Costing environment, to ensure that each separate order is allocated an accurate and consistent portion of all costs associated with delivering a service.

In a service industry setting, the unit of output chosen to allocate costs is usually based on a unit of time. Often this is expressed as a cost rate per hour. The general formula to calculate the unit cost on which charge rate can be based is:

$$\textit{Cost Rate per Unit of Time} = \frac{\textit{Total Cost Base to be Absorbed}}{\textit{Direct Labour Units Available}} \quad \textit{or} \quad \frac{TCB}{DLU}$$

Note: Total costs and total time could be either based on historical actuals, budgets or forecasts but must be determined from within the same time period.

The billing rate which is quoted or charged to customers is generally calculated by marking-up the Cost Rate by the Profit Margin %.

Divisional Cost Base *DCB*

The composition of the Cost Base may be calculated for a particular division of the business or for the entire enterprise. The Divisional Cost Base will include all costs for that division and the Total Cost Base will include total divisional costs plus a proportion of the general overheads associated with maintaining the entire enterprise.

An example of the composition of a cost base for a division, department, or section:

- Total labour costs of all personnel who are directly responsible for delivering the service[1].
- Labour oncosts for above (Super, LSL, Loadings, WC, Payroll Tax etc)
- Total labour costs for support personnel.
- Labour oncosts for above (Super, LSL, Loadings, WC, Payroll Tax etc)
- All other variable costs incurred in delivering the service.
- All other fixed costs incurred in supporting the delivery of the service and the ongoing maintenance of the division, department, or section.

The total of these costs = Total Direct Cost Base or DCB

[1] It is important to differentiate direct labour personnel from those in support. Direct labour personnel are those directly involved in carrying out the service. For example, a lawyer advising a client, a mechanic fixing a car, a consultant working with a client. If an administrator also spends a portion of their time on direct chargeable work, their salary needs to be spit between direct and indirect wage costs.

The individual cost items included in calculating of the DCB should match those contained in the enterprises Chart of Accounts. This will facilitate future performance analysis.

Total Cost Base *TCB*

To determine the Total Cost Base, the DCB needs to be increased by a portion of the enterprise-wide overheads apportioned to the relevant division. These general overheads are often arbitrarily allocated to each division based on a variety of criteria such as % of sales, % of direct labour activity, floor area etc. General overheads may consist of accounting fees, administration salaries and on costs, depreciation, marketing, IT, insurance, rent, finance costs, utilities, etc.

The Total Cost Base = DCB + Proportion of General Overheads = TCB

Total Direct Labour Units *DLU*

The only method by which overheads can be recovered, is through the billing of the services provided to paying customers. In the case of a cost absorption system, the medium through which costs are recovered is by allocating a proportion of the total costs against each direct hour of labour expended to deliver the service. Therefore, the correct calculation of the Total Direct Labour Units **DLU** is critical. This value is often incorrectly calculated resulting in the under-recovery of overheads. Only the total hours capable of being billed should be included in the DLU calculation. The following example demonstrates the basis for this calculation.

Ajax Consulting employs four full time consultants who are responsible for directly servicing clients.

Total hours per annum paid to the consultants	38hrs x 52 weeks x 4 =		**7,904hrs**
Less	Annual leave 38hrs x 4 weeks x 4 =	608hrs	
	Public holidays 38hrs x 2 weeks x 4 =	304hrs	
	Ave Sick leave 38hrs x 1 week x 4 =	152hrs	1,064hrs
Total Available Hours			6,840hrs
Less	**Under-utilized time**		
	(Under the best of circumstances there will be periods of time that		
	cannot be billed e.g. Training time, disruptions, cancellations etc.)		
	Assume that 10% of Total Available Hours is non billable =		684hrs
Total Direct Labour Units available to be billed.			**6,156hrs**
This implies that the labour Utilization Ratio is			**78%**

Because the final determination of the Utilization Ratio is fundamentally arbitrary, the approach often taken is to set a budgeted rate and to use this to calculate the anticipated chargeable hours. For

example, research has shown that a Utilization Ratio of between 70% and 80% is often considered optimum in a typical business.

Calculating the Charge out Rates

$$\textit{Divisional Direct Cost Rate} = \frac{\textit{Divisional Cost Base}}{\textit{Direct Labour Units Available}} \quad \textit{or} \quad \frac{\textit{DCB}}{\textit{DLU}}$$

$$\textit{Divisional Total Cost Rate} = \frac{\textit{Total Cost Base}}{\textit{Direct Labour Units Available}} \quad \textit{or} \quad \frac{\textit{TCB}}{\textit{DLU}}$$

$$\textit{Divisional Billing Rate} = \frac{\textit{TCB}}{\textit{DLU}} \times \left[\frac{\textit{MU\%}}{100} + 1 \right]$$

Where MU% is the percentage profit margin applied to the base cost.

The **Divisional Direct Cost Rate** is sometimes used to cross charge services supplied within divisions of the business.

The **Divisional Total Cost Rate** is often used in **Job Costing Systems** to ensure all costs are charged against individual jobs to either assist in calculating the charge out price of a job or where the project has been tendered, to determine the profit outcome on the project's completion.

The Divisional Billing rate is used to quote on tendered services. Because market forces often result in the price quoted modified due to competition, it is important to understand the relationship between costs and the available margin, particularly when prices are reduced to win a quote.

Marginal Costing

In Microeconomics the term marginal cost refers to the cost that results from a manufacturer or service provider producing an additional unit of output. Depending on the preexisting level of output, the marginal cost will most likely be less than the average cost per unit. This is because the marginal cost will equate to the variable costs, the fixed cost component being constant over any level of output.

Some businesses adopt the approach that because they are operating at near full budgeted capacity, all costs have already been absorbed and therefore they are able to win additional work by quoting a rate excluding the recovery of fixed costs. In effect the business is obtaining a competitive advantage by leveraging off the firm's ***increasing economies of scale.***

This approach is sound, but care needs to be taken that an overzealous sales department does not use this method when the business is not operating at full capacity otherwise overheads will not be recovered, and losses may result.

Performance Management and Job Costing

The calculated Billing Rate may simply be used to estimate charge rates in the tendering process. However, where a Performance Management System is required, it will be necessary to introduce a Job Costing System. Many accounting packages include a job costing component.

The adoption of a job costing system requires a disciplined approach to the recording of the chargeable time against each job. Unless all time spent on a job is recorded, significant inaccuracies will occur.

Because the costs allocated to each job are estimated by virtue of the overhead estimates used in the calculation of the Divisional Total Cost Rate, there needs to be a process to historically review the accuracy of system. This generally takes the form of determining the total value of the Costs charged against all jobs within a period, against the total of all actual costs incurred within the same time frame. Because the Divisional Total Cost Rate can be decomposed into Chart of Accounts cost centres, the total of each element can be compared to the corresponding actuals within the firm's financial reports. The following example demonstrates this form of analysis.

Cost Absorption Analysis for XYZ Division. For the Year ending 30th June 2024

Total Direct Hours Charged	Total Direct Hours Paid	% Utilization
12,000	16,000	75%

Cost Centre	Unit Cost Per Hour	Total Value Recovered	Actual Costs Incurred	Over (Under) Recovered
Direct Labour	62.71	752,467	805,000	-52,533
On Costs	10.66	127,919	136,850	-8,931
Support Labour	25.30	303,644	310,000	-6,356
On Costs	4.30	51,619	45,000	6,619
Variable OHDS	27.50	330,000	483,000	-153,000
Fixed OHDS	17.08	205,000	27,000	178,000
DCB	147.55	1,770,650	1,806,850	-36,200
Share of Group OHDs	79.17	950,000	923,000	27,000
TCB	226.72	2,720,650	2,729,850	-9,200

Note: The above cost centres may be broken down to individual GL accounts.

The analysis of the variances can identify the actual level of utilization, possible excessive expenditure and form the basis for revised costing rates for future quotes. The monitoring of cost recoveries should increase efficiency and consequently improve growth prospects and profitability.

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