Fire Suppression Services Incorporated
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Job Costing or Cost Accounting

Summary

Cost Accounting, commonly known as Job Costing, involves the calculation of costs involved in a construction "job".

It is the process of tracking the expenses incurred during a job against the revenue produced by that job. It is mostly used by building contractors, subcontractors, architects, engineers and consultants; and the process usually requires good software.

It allows for analysis of the bid against the cost, estimated revenue against actual revenue and showing the profitable & least profitable areas of a business, results of which enable you to be more accurate on future bidding processes.

Discussion

The purpose/intent of Cost Accounting is to compare job costs against actual costs AND to find out if the project required less or additional resources towards the middle and end of the project.

Cost Accounting uses items.

1. Use Items when purchasing
2. Use items when selling goods and services
3. SO! This means: use an ITEM TYPE instead of an expense type on a check, bill or credit card charge.
    a. Set items up carefully: chose 'I buy this item' for items we purchase and enter the 'Standard Cost' (see further down the page for Standard Costs definition);
4. Use the same items you record for costs for a job on the invoice for the job.
    a. Remember, expenses become revenues, and to be able to compare Direct Costs to Gross Revenues, We MUST USE the same item on both sides of the transaction.
    b. Watch out for this, you can have the owner invoice for a generic item by insisting on a simple invoice. Have him use excel or word, and you enter a matching invoice in the Job Cost software using the proper items.

There are a number of items to attend to in Cost Accounting:

1. Tracking the costs involved in the job
2. Ensure all of the costs are invoiced to the customer
3. Produce Reports showing details of costs and revenues by job

The fundamental components of cost accounting are:

1. Bids (aka quotes, estimates, proposals)
2. Revenues
    a. Critical to the life of our Company!
    b. Cost Accounting categorizes revenue by account AND by customer, AND by job and item
    c. Jobs are sub-categories of customers.
    d. Items are sub-categories of revenues/expenses.
    e. Expenses become revenues as costs are incurred for a job, marked up and passed on to the customer as revenue.

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f. To enable us to compare our costs to the revenues they produce, we should create matching categories in your revenue accounts and goods sold accounts (COGS)
g. SO, Fire Suppression Services Incorporated's Chart of Accounts should reflect general overall categories of the business, NOT individual customers, vendors or detailed sales/costs information.
   i. It does not. The reverse is true.
h. Such details should be 'items', 'cust list' vend list'

3. Time & Materials job
   a. Cost of labour, cost of materials are both passed on to the customer.
   b. Markup for overhead and profit may be built-in as a percentage of each item or listed as a separate line item
   c. Often preferred by the SELLER, as unforeseen costs are passed on to the customer.
4. Fixed Fee job
   a. Is an agreement between you and the customer to complete a job for a fixed price, no mater what costs are incurred by you. Estimator should set the price high enough to cover all contingencies, which generally results in a higher price than a Time & Materials job.
   b. To the customer, it 'seems' like a good idea!

Items

a. Represent the products AND services we sell.
b. We should have many items for each revenue/expense account categories in out COA.
c. With 'items' we can enter details about what we buy & sell, then 'map' or 'link' the detailed item to the more generalised accounts in the COA.
d. Then we can 'map' many detailed 'items' to a single account in our COA.
e. Doing it this way permits a greater level of detail in the item list whilst keeping the Chart of Accounts list concise.
f. The 'logic' is: "a single item would be mapped to a matching pair of accounts in our COA. E.g. an Inspection hourly labour item would map to Inspection Labour Revenue in the item setup dialog ..(I Sell This Item), and to Inspection Labour COGS ..(I buy this item)
g. Items focus on revenues
   i. They are goods and services we sell
   ii. Use 'Service Items' for labour
   iii. Use non-inventory items for materials. (the non-inventory title just indicates that you are not tracking unit quantities or unit costs; they are still goods & inventory we hold in inventory.)
   iv. To track unit quantities and unit costs, use inventory items; VERY CAREFULLY!
   v. 'Inventory Items' means you want to track and enter unit quantities when you buy and sell as well as reconciling accounting records to the physical quantities on hand in between buying and selling. (NOT an ITEM type for the faint of heart!)

Direct Costs

c. Direct Costs are directly associated with a job, and can be identified as part of the finished product.
   i. Cost of pipe, or chemical or tank or nozzle or sprinkler head …
   ii. Cost of labour to cut the pipe, fill the chemical, fit the nozzle or sprinkler head.
d. Direct Costs are different and separate from indirect costs.
e. Direct Costs are the costs, to FSSI, of the products and services we sell.

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f. These are the costs involved in job costing.
g. Direct costs are NOT overhead
h. Direct Costs are categorised on the 'Profit & Loss' report as Cost of Good Sold (COGS).

Standard Costs

i. Standard Costs = direct costs + calculated/estimated piece of related costs that are not billed separately
j. Standard Costs are 'theoretical' calculations. (spreadsheet)
   i. Example. 1. For every Hood System we install we need, on average, 100 ft of stainless steel wire; 80 ft of pull-station conduit; fifteen elbow-pulleys; 8 hood seals … etc. These are items we buy in bulk, and are not billed directly to the job.
   ii. The purchase cost for this item (hood System) is the cost of the item alone.
   iii. The Standard Cost of the item (Hood System) <u>includes</u> the cost of the wire, conduit, elbows & seals.
   iv. Example 2: for every hour we pay labour, we incur costs,(approx. 8%) in payroll taxes, 5% in workers compensation, FICA etc.
      1. In creating this labour item, the 'purchase' price is the hourly cost of the labour.
      2. The Standard Cost includes the hourly costs of the labour, <u>plus</u> the payroll taxes, Workers Comp, FICA etc.
k. Standard Costs should be accurately identified.
l. Standard Costs are only used in job cost reports
m. Standard Costs are <u>NOT</u> used in the general ledger or in Financial Statement reports.
n. SO! In most cost accounting software, when you set up an item the dialog will ask you to set three different amounts:
   i. Sales Price,
   ii. Purchase Price and
   iii. Standard Cost.

<u>If you</u> set a Standard Cost, it will show in job profitability reports, even though you have not assigned the cost to a customer or a job when it was purchased.

Indirect Costs

o. Indirect Costs are costs that <u>cannot</u> be identified as part of the job even though they were incurred indirectly, in the process of completing the job.
   i. E.g.: Rent, Insurance, EDP/IT, payroll.
p. Indirect Costs are <u>NOT</u> included in job cost reports.
q. Indirect Costs are categorised on the 'Profit & Loss' report as 'Operating Expenses'

5. Quotes
   a. A Non-posting transaction. They do not affect your financial statement or the General Ledger.
   b. They do provide a means to track costs as the job progresses, so that costs stay in line, and that variances are dealt with quickly
   c. They are <u>estimates</u> of <u>projected</u> costs before the job is awarded.

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Five Common-Sense Rules of Successful Estimating

1. A good estimate must start with a complete understanding of scope of work followed by an accurate quantity takeoff.
   a. It's all too easy to miss out identifying items of work in the project. This may be due to absolutely mundane reasons such as missing drawings, details or specs. It could be due to a misinterpretation of the scope based on an ambiguous statement or comment. Or, it could be due to a more serious reason such as lack of experience in conceptualizing the work to be performed in the field.
2. Understand your resources and their cost to you:
   a. – material suppliers, (Ferguson, Hilti, Oxarc etc.)
   b. - labor force, (Des, Tim, Bill, Tek, Office Staff etc.)
   c. - subcontractors, (Craig, AA Fire, Gary Marchant etc.)
   d. - construction equipment, (Steam Machine, Compressors, Water Pumps, AWP, Ladders.)
   e. - indirect costs, (Rent, Phone, Power, Payroll, Insurance, IT)
   f. - management. (not the person, but the act of managing the job)

   Easier said than done, this requires a thorough analysis of costs. A cost engineer may very well team up with the comptroller, accountant, field superintendent, project manager, purchasing manager. Even outside labor consultants may be hired to reach cost data to be incorporated in estimates. Remember, such data is not static, but changing in time, and periodic reviewing and updating is a must.

3. Evaluate your strength and weakness and establish comparative advantage.
   This is where the upper echelons of management should participate extensively. Typically, they have the background experience not just within the company but with other companies and industries vis-à-vis competition.

Once the main parameters are established, the middle management in collaboration within departments may detail out the analysis and attach workable numbers.
These, in turn, become the ammunition of choice for the estimating department so that they can come up with an estimate that is not only sufficiently low but also profitable for the company.

4. Determine appropriate Overhead and Profit rates

In order to achieve optimal overhead and profit applications, item 3 above has to be completed so that risk factors are established and evaluated.
Considering the general description of profit as being the return for taking a risk, it's essential that it has to be a calculated risk.
To arrive at these figures, not only the company cost structure and records must be thoroughly analyzed but also competition must be evaluated.
In general, it is not recommended to trim bid figures from overhead and profit since they represent the long term viability of an ongoing business concern.

5. Use sound estimator's judgment and keep an open mind and ear.

When preparing a bid level estimate, care must be taken to identify not only labor and material cost items shown on the plans, but also labor and cost items that may not be reflected on the plans.
This is where good estimating and estimator's judgment comes into play.
It's all right to consult a project manager, an engineer, a field superintendent and even a simple workman.
A few new ideas here and a few there may mean understanding the project better and trimming estimating costs which may in turn mean a winning and profitable bid as opposed to a disappointing loss.

Summary

Three main divisions in costing a job

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1. Direct material costs
    a. Ferguson, Hilti, gasoline, packaging, shipping/freight
2. Direct Labour costs
   Direct labor directly adds value to the product or service. This type of labor takes materials and machines it, or assembles it, etc to make it worth more than it was worth before.
    a. Fitters, Inspectors, Estimator, Project Managment
3. Overhead (sometimes called Burden costs)
    a. Office Staff (Payroll, Accounting, Debt Collection, Estimators)
    b. Rent, mortgage, utilities, vehicle maintenance.

These three can be subdivided further.

1. Direct Labour
    a. Direct labor is the wage amount paid to those employees directly involved in the manufacture of the product or service, such as an assembler or machinist. Direct labor costs get a lot of scrutiny. This is a cost that management can control and the Cost Accountant is asked to report on the direct labor cost per part, direct labor downtime, and improvement trends in labor.
2. Indirect Labour
    a. Indirect labor is the labor that is indirectly involved in a product or service, such as a fork truck driver or machine repair. These costs too are controllable and management constantly reviews the costs and looks for ways to be more efficient. Some of the analysis the Cost Accountant will do is: what savings will be realized by going to two 10 hour days instead of three eight hours shifts, what savings are available if we hire outside contractors to rebuild machinery, etc.
3. Material cost
    a. The material cost is the cost of direct materials that go into making the product. This cost is analyzed to minimize the scrap amount. Scrap can occur in the production process or in the material handling process. The purchasing department is tasked to keep the costs of the purchased material low and to try and achieve cost reductions on this material.
    b. Material is the raw and purchased parts that make up a product. Do not confuse supplies as material. Supplies are items like gloves, hand tools, sandpaper, etc, that may be used in the production process, but are not part of the completed product.
4. Burden cost

Burden costs are the costs for the plant that are not included in direct labor or material costs.
These costs are often the largest cost for a product. Allocation of these costs to the product is often done incorrectly.

These costs include:

- Indirect labor costs
- Fringe benefit costs for plant salary and labor
- Plant leases and utilities cost
- Plant maintenance costs
- Machinery maintenance and depreciation

Allocation:
When allocating to a part or a job, the Cost Accountant needs to develop a reasonable allocation method.

This method must take into consideration:

- If certain machines require more maintenance than others.
- If more indirect labor is used on certain jobs.

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- Floor space needed.
- If area used is more expensive due to building type, etc.

This is sometimes a difficult job for the Cost Accountant. However, allocation should not be done in haste. These costs are very large and can make a part or service profitable or unprofitable.

The end result needs to fairly allocate costs to jobs. Allocation needs to be based on cost studies and interviews with plant personnel.

Allocation of the rate to the job:

The allocation rate is usually calculated for each machine or operation.

The allocation rates can be based on the time each part spends at the operation or in the machine. Some other method may be used also.

The outcome of the allocation should be to accurately reflect the cost to produce the part.

a. Burden costs are accounting costs that are not direct product costs. These include building rent, health insurance, utility costs, etc. Administrative costs are the costs related to administrative functions, such as sales people salaries, upper management, etc. Management watches these costs, but controlling these costs is not as easy as the production costs, since a lot of these costs are considered to be fixed costs. Fixed costs are like building rent and taxes.

5. Administrative cost

Administrative costs are usually not part of the burden costs that a Cost Accountant will determine for a business, and therefore are not part of the costs of a manufactured part or service. These costs are reported separately and include:

- Sales people salary and associated costs
- Upper Management salary and costs

a. There is a good reason that these costs are not part of burden and are not included in the product price.
The administrative people are usually working for more than one plant or business. They may also be working on several different projects.
To try and incorporate these costs in a product or service is often difficult. The costs are usually allocated to several locations and projects.
The Cost Accountant or whoever is creating the budget, will receive these costs from Management. She will then simply add this amount to the budget.
Each month these costs are recorded in the general ledger. The costs are also reported on the income statement. When the account structure of the accounting reporting software is initially set up, administrative costs should be segregated by assigning a range of account numbers for these costs.

In many companies, these costs are kept as private as possible. Most professionals in this group are highly compensated and receive many benefits that the rest of the workforce does not. These include large salaries, car allowances, country club memberships, expense accounts, etc. Many public companies must report these costs to the public though. A company's annual report can be interesting reading.

Like any other costs, management will usually review the budgeted admin costs for the year and also review the actual costs to the budgeted costs. In slow economic times, even these costs are certain to be reduced.

Cost reports:

Once the accounting costs are defined, these costs can be collected and then reported to management.

Costs can be reported by part, or for the entire plant and can be generated for any period of time. These reports are reviewed by management and often result in management decisions for change or improvements.

A thorough analysis of costs is usually the job of the Cost Accountant. The Cost Accountant works for and reports to the management of the company. Unlike other accounting information, the cost information for individual products or services is secret and only

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reported to management. If the competition knew the cost of other businesses, they would have an unfair advantage when quoting on new work.