

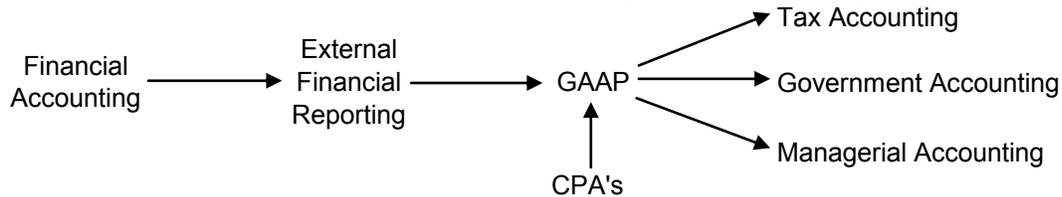
ACCT 323

COST ANALYSIS & CONTROL

aka: COST & PROFITABILITY ANALYSIS

3 Exams, each equally weighted, the average of the three is your letter grade.

External Accounting must follow GAAP, necessary in order to get a favorable opinion from an independent CPA which is necessary for the company to be able to publicly trade.



We will talk about how the government requires certain costs to be developed for purposes of their contracts. One of the major areas is Overhead Costs Allocation. We will talk about this a lot over the semester because it affects almost every concept of full cost for any given object you are trying to cost out. How it is allocated is critical to the amount you come up with for cost or cost per unit. Companies can be sued and executives arrested if the procedure is not followed properly. When the government interacts with private industry in the execution of a contract they audit almost every single one of the cost charges made to the government.

All this plays into how we cost or price whatever the products or services are that we sell. Applies in any given business. All of the principles we will discuss this semester are equally applicable to any industry or enterprise. However, the discipline of cost accounting grew out of the manufacturing industry back during the industrial revolution because managers needed a way to find the true cost of manufacturing an item which had never been manufactured before and find a reasonable price to charge considering not only the cost of manufacturing but the entire cost of doing business. Needed to be able to show a profit to purchase equipment, pay debt, pay salaries...

We will learn this discipline from its genesis so that we can understand the principles behind it. Then we will be able to go forward and apply these principles to our individual activities.

Examples include cost control, cost analysis, cost assignment, understanding the cost of providing the services. These are the things which management must understand in order to make proper plans.

Managerial Accounting

Managerial Accounting takes all of the information available to us and helps management make better decisions. More cost effective and revenue boosting. In a word, more profitable. This course could be known as Cost and Profitability Analysis because in the old days accountants were concerned about simply the cost of something and controlling the cost of something. Then they discovered that if they controlled cost in one area it could have an impact on the revenue stream. And that impact on the revenue stream might offset the positive impact on the cost control. So you really can't do one without the other. Really have to think in terms of looking at the entire picture, cost, revenue, and their effects on profitability. This will be the theme for the entire semester. We will focus on the Managerial Emphasis.

VALUE TRAIN



Each employee is a contributor to a larger business enterprise. As we move up in our companies our thinking must broaden, must take into account all of the other important things to the business.

When we look at the business in total and break it up into the **Value Train**, all the contributing parts of the business (above) we find that in terms of success factors some of the most important items are **Customer Satisfaction** (a cliental base which is happy with the good or service provided by the company is critical to the companies ability to repeat revenue), **Cost** (must have control of your cost, your customers may not be happy when you figure out you have to raise prices), **Quality** (customers will want dependability and an enduring product), **Time Through the Value Chain** (critical, time it takes to get goods to market is key to serving the market, this is a critical cost savings).

Innovation: the ability to change and adapt is important in not only the product brought to market but in every area of the Value Train. Innovation in how you do research, how you design the product, how you produce the product, how you Market, Distribute, and Customer Service.

All areas of the Value Train are equally important. None is more important than the other. Every step is essential. Having a dual internal and external focus is also essential.

Consider the Distribution aspect. Ex., Home Depot gets it's suppliers to stock all of their shelves for no charge. Now, at the point that Home Depot actually scans the product across the bar code reader it is transferring payment directly to the supplier. At the time of sale the supplier is being paid for their product. No 30, 60, or even 90 day payment waiting period. Suppliers have

embraced this model and agree to stock the shelves in exchange for prompt payment. This empowers the supplier to act efficiently and get product to market.

There are many profitable innovations which can be achieved at every point of the value chain.

Continuous Improvement

Continuous Improvement is essential to the long term success of any company. In fact, companies who have open door policies to employees do the best. Toyota requires it's employees to each come up with 3 ideas for improvement per year. And 97% of these ideas are implemented per year.

COSTING

Within a manufacturing company there must be a production activity (factory) and an administrative activity (office). Of course there will be other “activities” but these two are the focus of this discussion. Note the same applies to a service organization, they too are producing something for sale. We will focus on manufacturing activities but must keep in mind the same applies to service activities.



FACTORY

Product Costs

Balance Sheet as Inventory

- * Direct Material
- * Direct Labor
- * Overhead

The production operation exist for only one reason, to produce product for sale. That is all they do. Their costs can be divided into three parts, direct material, direct labor, and (everything else) overhead or indirect costs.

Product Costs result in the producing of product. As a result they have future benefit. Therefore we can take these costs and capitalize them as **INVENTORY**. Recall that inventory is an asset. These show up on the balance sheet.

What is Direct Material and what is Direct Labor?

Direct Material

Direct Material is the actual material which is directly traceable to and incorporated into the final product. Example, the metal in the desk and the laminate on top are both direct materials.

Direct Labor

Direct Labor is the laborer who is actually physically working on the product. Actually assembling the various components of the product, directly laboring on the product.

Factory Overhead

Other factory costs which are not direct material or direct labor. Here we are talking about other **FACTORY COSTS**. We are not considering administrative overhead, executive salaries for example. Here we are only considering **FACTORY COSTS**.

Factory Overhead is any factory costs which is not direct material or direct labor.

Factory Overhead Examples (INDIRECT COSTS)

Manufacturing Supervisor

Janitor, Maintenance

Utilities, can't really tell how much lighting went into a product, it's indirect.

Factory Insurance, Property Tax, Supplies (General)



OFFICE

Operating Expenses or Period Costs

Income statement as Expense

- | | |
|--------------------|----------------------------|
| * Marketing | * General & Administrative |
| * Sales | * R&D |
| * Customer Support | |

Operating expenses may be referred to a Period Costs because they are incurred with the passing of a period of time (as opposed to being incurred with the making of the product).

Operating Expenses are **EXPENSED** as they are incurred because their usefulness expires when they are preformed and incurred. They are expensed as incurred

For example, the professional staff, such as accounts, get paid for the time they work regardless of how many products are made or not made. As time goes by these cost continue and are paid as opposed to factory costs which exist solely due to the fact that the company is making a product.

DIRECT MATERIAL (D/M) and DIRECT LABOR (D/L) are referred to as **DIRECT** or **PRIME COSTS**.

DIRECT LABOR (D/L) and OVERHEAD (O/H) are referred to as **CONVERSION COSTS** because it takes labor and overhead to convert material into finished products. (yes, direct labor overlaps between the two)

INVENTORY

In a manufacturing enterprise there are three inventory accounts, direct or raw materials, work in process, finished goods. This semester's model will be a little more complicated.

Manufacturing Inventory Costing

	Direct Material	(labor & overhead) Work in Progress	(ready for sale) Finished Goods
Opening Balance	\$ 20,000	\$ 30,000	\$ 50,000
Additions	\$ 100,000	\$ 105,000 D/M \$ 150,000 D/L \$ 210,000 O/H	\$ 460,000
Available	<u>\$ 120,000</u>	<u>\$ 495,000</u>	<u>\$ 510,000</u>
Less End Inventory	<u>\$ (15,000)</u>	<u>\$ (35,000)</u>	<u>\$ (40,000)</u>
= Transfers Out	<u><u>\$ 105,000</u></u>	<u><u>\$ 460,000</u></u>	<u><u>\$ 470,000</u></u>
	out into next stage		

Overhead (O/H)	
Factory Depreciation	\$ 35,000
Misc. Plant Overhead	
Factory Insurance	\$ 42,000
Factory Property Tax	\$ 11,550
Plant Sup. Salaries	
Ind. Manufac. Labor	\$ 7,000
Factory Supplies	
Factory Utilities	\$ 87,500
Factory Maintenance	
Factory Utilities	
Indirect Materials	26950
Janitor	
	<u><u>\$ 210,000</u></u>

result is
**Cost of Goods
Manufactured**

result is
**Cost of Goods
Sold**

D/M =	Direct Materials
D/L =	Direct Labor
O/H =	Overhead

Key when allocating the costs or expenses is to look carefully at the definitions above. Which costs and expenses are a direct result of manufacturing? Indirect manufacturing go to Overhead.

Multiple Step Income Statement

Sales	\$ 1,000,000
COGS	\$ 470,000
Gross Profit	<u>\$ 530,000</u>
Operating Expenses	
Marketing & Sales	\$ 100,000
Customer Support	\$ 50,000
General & Admin.	\$ 75,000
Research & Dev.	\$ 150,000
Total Operating Exp.	<u>\$ 375,000</u>
Operating Income	<u><u>\$ 155,000</u></u>

Our Income Statement stops without including Other Income and Expense which includes such thing as gain or loss on sale of equipment, gain or loss realized or unrealized on marketable securities, interest income, interest expense, income tax, things of this nature. So we are stopping a pre-tax income. Why? Because our job here is to maximize the core profitability of the company. Other people/departments are worried about finance, interest income, interest expense, marketable securities... And the company also has tax accounts who worry about those kinds of things. We will concentrate on the nugget of profitability which is critical to the long term success of the company. A company can boost its short term cash flow through barrowing, repayment, investing, selling investments, etc. But the company is not necessarily in the business of doing these kinds of things. What we really want to do is understand the profitability of the company for the business that it is in. We want to understand the dynamics of profitability for a company up through the operating income level, this is what really makes the company. Everything else is supporting cast.

The purpose of this analysis is to come up with **Inventory Transfers** and **Cost of Goods Sold**. In achieving this goal we come across a lot of information in these schedules which tell us a lot about what is going on in the company. Must be able to understand what these reports are trying to tell us.

What is our example telling us?

	Direct Material	Work in Progress	Finished Goods
Opening Balance	\$ 20,000	\$ 30,000	\$ 50,000
Additions	① \$ 100,000	\$ 105,000 D/M \$ 150,000 D/L ③ \$ 210,000 O/H	\$ 460,000
Available	<u>\$ 120,000</u>	<u>\$ 495,000</u>	<u>\$ 510,000</u>
Less End Inventory	② \$ (15,000)	\$ (35,000)	\$ (40,000)
= Transfers Out	<u>\$ 105,000</u>	⑤ <u>\$ 460,000</u>	⑥ <u>\$ 470,000</u>

- 1) In this period company spent \$100,000 in raw materials.
- 2) They had an inventory decrease in this period, used faster than replenished.
- 3) Of the three components of product cost the most costly is Overhead.
- 4) The next most costly component is Direct Labor and Direct Material is the least.
- 5) They completed slightly less (\$460,000) than they added (\$465,000 which is the sum of D/M, D/L, and O/H) to inventory and work in process.
- 6) We can see that production completed \$460,000 but that sales sold \$470,000.

The last item has to do with the rate of demand in work in process versus the rate of completion in work in process. One of the elements of profitability is **Productivity**.

Productivity is critical because we are paying labor and overhead is increasing with time so the question is are we generating enough salable product to pay for the expenses. If you pay for a lot of overhead and do not get a lot of productivity the company will go into debt. Checks will be going out but not coming in. Productivity is a critical component of Profitability. Further, if the company is not producing as much as marketing is selling the company will run out of stock. On the other hand if marketing is not selling as much as production is producing the company will take on bulging inventory values. Keeping production and marketing in sync

or balance is a critical component of not expending more cash flow than you need to or missing opportunities when they present themselves.

For these reasons it is important for us as managers to see a set of numbers and know what is being communicated. See a set of numbers and ask intelligent questions. Ask why inventory is declining? Did we anticipate this? Are we overestimating? Are we taking corrective action? Do we have sufficient inventory to meet next month's projections?

What we will look at this semester is looking beyond these surplus (?) numbers to what the elements are which make these numbers what they are. How do we establish what the key criteria are for profitability and how do we analysis these criteria?

Must understand not only the discipline but the larger picture.

HOMEWORK

Ch 2 pbs 2-31 and 2-33 on pages 55 and 56.

Note we will have to produce these schedules and forms from scratch on exam. Use caution if downloading the Excel templates from text website.

In general, the homework solutions should look similar to what we do here in class.

2-31: Given beginning and ending inventories and list of different kinds of cost. We must determine where in the model these costs go. Some to the inventory accounts, some to income statement, some grouped in overhead, etc. Do the 3 inventory reconciliations and then do the income statement.

2-33: Pretty much the same as 2-31. They include some accounts payable and receivable stuff and we should ignore these because they do not figure into the solutions we are working on.

In class we will compare the income statements of both companies though they are not exactly comparable. We'll see what we can understand for the two companies in terms of their relative profitability's.