Inventory

by Michael Goldman

Assume you are a retailer. You bought three cases of *Energy Drink* from three separate sources - one case came directly from the manufacturer at 75 cents per can. One case was an emergency fill-in that you stopped by and picked up at your local warehouse store, at a price of 85 cents per can. The third case you got a great deal on from a distributor - because the product was only weeks away from its expiration date you only paid 60 cents per can. You opened the cases and put all 72 cans loosely on the shelf. You sold two cases worth of *Energy Drink* (48 cans) and have one case (24 cans) left. What is the value of your remaining inventory?

As consistent readers of this series already know by now, the answer is a very unequivocal "it depends";

- If your accountant valued the inventory on either the First In First Out (FIFO) or Last In First Out (LIFO) method, the value of your remaining inventory would totally depend on the order in which you purchased the three cases. It could be either 75 cents per can, 85 cents per can, or 60 cents per can.
- If your accountant valued the inventory using the Average Cost method, the value of your inventory would be 73.33 cents per can, assuming you bought all three cases before you sold any cans. If you bought some, sold some, bought some more, sold some more, etc. than the average value would need to have been recalculated after every purchase transaction and would depend on both the order in which your purchases were made and how many sales you had between each purchase.
- If you somehow marked each can as to which purchase lot it came from and used a specific cost method to value your inventory, the value of your remaining inventory would be the specific amount that you paid for each of the remaining cans.
- Of course, if the cans remaining in your inventory are the ones with the expired dating, you have to depreciate their valuation to reflect that impairment, because whatever method you use to value your inventory it is also subject to the Lower of Cost or Market principal. If your customers don't really care how old their *Energy Drink* is, you may be able to keep the expired inventory at full value. On the other hand, if you are selling in a municipality with soft-drink police who will fine you $1 per can for every can past its expiration date, your inventory is worthless.

As you can see, the value of the cans remaining in inventory can be absolutely any number between 0 cents per can and 85 cents per can, depending on the order and timing of your transactions, market conditions, and the method that you use to calculate inventory value.

Each of these methods has specific advantages;

- LIFO was a favored method in the 1970's and 1980's because in times of high inflation it best reflects the current purchase price in the cost of goods sold (thereby lowering taxable income).

However, in times of high inflation LIFO can grossly understate inventory values on the balance sheet and generate strange income results once you start liquidating older" layers" of product.

- FIFO both best matches the accounting to actual product flow (hopefully) and values the inventory as closely to current costs as possible. It's major disadvantage is that in times of rapidly changing prices, FIFO accounting can generate less accurate Income statements.
- Average Cost can be computed in different ways, such as weighted-averages or moving averages. Average cost is not as conceptually pure a thought process as LIFO or FIFO, but better weighs the desire for an "accurate" inventory value with the desire to match cost of goods sold to current revenues. It is less subject to manipulation than the other methods.
- Specific Costing has only become practical within the last few decades with advances in computing power. Before then most retailers used the "retail accounting" method, which averaged gross margins in departments or pools of similar inventory. Under this method, buyers influenced their inventory values when they purchased goods, since every purchase was used to calculate the gross margin of the inventory pool. Today most large retailers use a cost based system, where they calculate the cost of each item sold (usually the average cost of that specific item) directly. Under this method the financial statements are more reflective of what was actually sold and what was left behind on the shelves.

Whichever accounting method a company uses, there are two ways that companies need to keep track of their inventories - in dollars and in physical units. Usually the system that keeps track of physical units of inventory is at least partially disconnected from the system that handles the accounting for inventory dollars. If they are not fully integrated, there is the constant danger that they will get out of sync.

There are three components to inventory accounting that need to be reconciled on a periodic basis - the inventory dollars in your accounting system, the inventory units in your perpetual inventory system (the system you use to manage the physical units of inventory), and the actual physical units of inventory that you possess. When your accountants or inventory managers talk about Book-to-physical adjustments or cycle counts, they are reconciling these various systems to each other.

If you think all this is confusing, don't even consider being the manufacturer of those cans of *Energy Drink*. Valuing the inventory of what you produced involves factoring in your raw material costs (water, sugar, caffeine, artificial coloring, aluminum, etc.), your direct labor costs, and your manufacturing overhead costs (supervision, supplies, taxes, utilities, equipment charges, facility charges, etc). Don't worry, you don't have to absorb any of this now, manufacturing accounting is a subject for a later chapter.

Despite the accounting complexities, Inventory is one of the easier areas of the balance sheet (and company) to manage. It is more liquid than long term assets and is tangible. Management can usually influence inventory levels both directly and quickly, but they have to be very involved to do this. As the

company's inventory is usually directly related to its purpose for being, the company's management expertise should be focused in this area.

What most managers forget about inventory is that contrary to what the accountants say, it is not really a short-term asset unless your company is self-liquidating. The specific pieces of produce in a supermarket hopefully turn over and are replenished daily, but the supermarket has a fixed investment in produce that stays relatively constant. Year after year, that supermarket will probably have approximately the same number of dollars invested in inventory. However you cost it, your inventory investment needs to be very well thought out and constantly reevaluated or it will grow into the monster that consumes you.

Somewhat separate from the accounting process for inventory, inventory must be managed well for the company to be successful. The accountants are primarily interested in calculating the cost of the inventory on hand and the cost of goods sold. Inventory managers are responsible for having the right inventory in the right quantities at the right time.

Successful inventory management involves having a good assortment - enough to spark your customer's interests, but not too much to confuse them or drive storage and handling costs too high. Typically inventory buyers can obtain lower prices by buying in volume, but large purchases have to be balanced against the risk of tying up too much space in your facilities and too much cash in your inventory positions.

Inventory managers usually focus on inventory turnover - how rapidly the inventory moves from your supplier through you to your customer. The faster you turn your inventory the more sales and profit you are generating from a given inventory investment. The way to boost inventory turns is to keep stocks low by purchasing less, but this could increase your purchasing and handling costs and also runs the risk of losing sales from being out of stock.

Competent inventory management probably involves coordination between more people and systems in most companies than anything else. Detailed sales forecasts are needed to forecast what inventory will be needed and when it has to be there. Financial forecasts are needed to ensure the inventory can be paid for without unduly burdening the company. Freight, handling, warehousing, and other inventory functions can be large components of inventory cost that need to be considered and managed. Purchasing agents need to find the best prices, quality, and availability. In a manufacturing environment, raw materials need to be converted into finished product. Then the inventory needs to be sold and delivered to the customer. And of course, all of this activity needs to be tracked, recorded, and accounted for.