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To Have and To Hold *(Inventory, that is)*

An executive at Intel Corporation is well known for once saying, "Inventory is the embodiment of imperfect information." In his perfect world the day that inventory is received it is converted and shipped to a customer. We would always know what to order, the exact amount to order, when to place the order and how to schedule operations. Truck drivers would know exactly when to drop product off and exactly when to take finished goods to our customers. There would never need to be any inventory.

Unfortunately, perfect information is usually something that is only discussed seriously by university professors and the Securities and Exchange Commission (think Gordon Gekko). Businesses have to deal with contingencies, guesses, changes, mistakes and just plain bad luck. So inventory is necessary because we live in a world of imperfect information.

What are the costs of holding inventory? Although necessary, inventory is often viewed as a necessary evil. Many executives believe that holding inventory should be avoided whenever possible simply because it can be used to mask operating inefficiencies. A small industry of supply chain consultants is more than happy to help companies reduce inventories (for a fee, of course).

To be sure, it would seem that most executives have agreed for some time now that carrying inventory is an expensive proposition. How expensive and what makes up that cost varies by study. The more authoritative texts divide inventory holding costs into 4 categories:

- Ordering costs
- Holding costs
- Stock-out costs
- Policy costs

"For our next vacation, I'm taking the family to Wall Street. They've got the most terrifying roller coaster I've ever been on!"

Models have been developed to help executives minimize the cost of ordering inventory. The most widely used is known as EOQ, or economic order quantity, which basically tries to balance out ordering, holding and stock-out costs.

Corporate Value Partners, Inc.

Corporate Value Partners is a corporate finance consulting firm. Services include:

- Assisting with the acquisition or sale of a business, business unit or product line;
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- Preparing business valuations;
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- Assisting attorneys with the financial aspects of lawsuits.

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How much are holding costs?
A study by the US Department of Commerce in the 1970's pegged inventory holding costs at 25% per year, as follows:

Obsolescence	9.00%
Depreciation	5.00%
Interest	7.00%
Handling	2.50%
Property tax	0.50%
Insurance	0.25%
Storage	0.75%
Total	**25.00%**

Interestingly, the US Air Force also presented an inventory cost study in the 1970's. They found that inventory carrying costs were 32% per year, of which 21% related to obsolescence! That sounds like a business model that has received some well-deserved attention since then.

Today, supply chain specialists have re-defined the estimated cost of carrying inventory. While the view that inventory has a carrying cost of about 25% still holds, the make up of those costs has changed over time. Recent reports are that the "capital" costs of holding inventory are 15% and the "non-capital" costs are 10% per year. One recent report places the range of carrying costs between 15-35% per year. Much of this evolution in thought has come about because of businesses' growing awareness and acceptance of their weighted average cost of capital ("WACC").

Published studies, however, don't seem to devote enough attention to the potentially devastating cost of stock-outs. In some industries a stock-out situation could well be the kiss of death for a business. Shut down one production line at a customer's plant and you might as well look for a new job. Those customers will find a source of supply, and it won't be your company.

It's a balancing act. The business challenge, as usual, is to find a balancing point. Unfortunately there doesn't seem to be a one-size-fits-all answer. Each business must find the point that balances all the risks. In general, companies that have severe consequences resulting from stock-outs will carry a substantial safety stock of inventory, and will consider related holding costs as just a part of doing business. Other companies may be forced into holding higher inventories due to demanding customer service requirements.

The above inventory cost statistics could be useful in assessing how much value each customer relationship adds to the value of your company. An executive could do a "down and dirty" residual income analysis by customer to develop a ranking — which relationships are adding more value to your company? Compare receivables by customer (easy) and inventory by customer (harder), both multiplied by a cost factor, to the gross profit you generate from each customer. As long as production and administrative requirements are substantially similar between customers, the analysis could provide some insight into the relative value of each relationship — and more importantly what needs to be improved to make each customer an excellent one!

Please contact Ronald DiMattia at Corporate Value Partners at (440) 333-1910 or ron@corporatevaluepartners.com with any questions or to discover how CVP can help you get the most out of your assets.

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