

## Inventory Stratification for Industrial Distributors

Inventory stratification, for most people, is defined as sorting the revenue for each item in descending order, finding the items that contribute to the top 80% of revenue and those that contribute to the bottom 20%. It is important to do this, but inventory stratification is much more than just sorting.

*Inventory stratification can be defined as the process of finding the set of items that should almost always be stocked in inventory ('A') Vs. the set of items that would contribute negatively to profitability if they are stocked in inventory ('D').*

### Multi-Criteria

Is revenue important in differentiating 'A' items from 'D' items? Certainly yes! Is revenue the only criterion that is required to differentiate 'A' items from 'D' items? Certainly not! Years of experience have shown that other criteria that represent velocity, profitability, stock-out costs, risks, etc. are just as important, if not more important. What do all these terms mean in terms of determining 'A', 'B', 'C', 'D' classifications?

### Basic Criteria

**Revenue:** Determines if a firm or a firm's location can cover its fixed costs. High revenue items are usually indispensable for sustainability.

**Velocity (Hits):** Consider two items, each generating about \$10,000 in revenue. Item 1 was ordered only 3 times the entire year, whereas item 2 was ordered 400 times during the same year. Which item would you need to stock? Item 2, of course! Why? If you don't stock it, you will need to expedite every one of the 400 times. Item 1, on the other hand, needs to be expedited only 3 times during the entire year. Also, think about customer perception of service levels if you stock-out every time on Item 1 vs. on Item 2.

**Profitability (Gross Margin Return on Inventory Investment or GMROI):** Consider two items. The annual gross margin for item 1 is \$10000, and the average inventory value over the year was \$1000  $\Rightarrow$  GMROI for item 1 is 1000%. Item 2 has a gross margin of \$12000, with average inventory over the year of \$16000  $\Rightarrow$  GMROI for item 2 is only 75%. Think about which item you want to have in stock.

Why look at GMROI instead of something like NMROI (Net Margin Return on Inventory investment)? Well, if you have information on net margin for each item, then this is definitely a better metric than GMROI. If, in the above example, item 1 is very bulky and costs \$10000 to deliver, then NMROI for item 1 is 0%! However, most firms do not have a differentiated cost of selling one item vs. another, in which case, GMROI works pretty well.

### Specialized Criteria

The above criteria are necessary in any inventory stratification system. Distributors in specific channels may need more criteria to make meaningful decisions. For example, in the oil and gas industry, stock-out cost is very important. Unavailability of a \$10 part can stop an entire offshore drilling rig – with losses of close to a million dollars every day. Another criterion that is being used is risk of obsolescence. It seems difficult to quantify the risk of obsolescence using data from an ERP system – one way to do it is to track the product life cycle and start increasing the risk as a product starts going through the latter stages of maturity. Another way to do it is to simply count the number of customers accessing an item – the higher this number, the lower the risk of obsolescence.

## Inventory Stratification for Industrial Distributors

### A Reality Check

While the above criteria serve as a very good platform to understand inventory, the reality is more complicated. Are historical gross margins straightforward to calculate? In most cases, yes. In some cases, no. Think about commodity prices that keep fluctuating. The historical gross margins on commodities depend as much on the costing method as on the actual margins themselves! How would you factor in supplier rebates while computing gross margins?

What about revenue ranks? One would think that revenue ranks are the easiest to calculate, right? In most cases, right. In some cases, not so right. Think about bundling of prices. Think about kits. How would you rank an item that produces very little revenue, but is a critical component of a highly profitable kit?

These questions provide plenty of food for thought. We have seen through many projects that these and other issues can be handled with the right mix of analysis and experience. Any inventory management system will work only if you account for these issues, or prove that these are exceptions.

### Too Many Ranks!!



What will a branch manager or a sales person do with so many different ranks? It is important to understand the relative importance of each of these ranks, and

how they can be combined into a single, weighted, final rank.



What would the branch manager do knowing that an item is ranked 'A', 'B', 'C', or 'D'? The branch manager should focus efforts on making sure that the 'A' items are supported well enough to get a high fill rate. The 'C' and 'D' items should either be drop-shipped from a supplier (if possible), or they should be moved to a central hub. If possible, 'D' items should not be carried at all – these are items that sell very little, have very little profitability, and will not affect financials in any significant way if they are not stocked.

### Impact

Stratification of inventory can have a tremendous impact on the finances and the operations of a distributor. You will see improvements in ROI as well as revenue by focusing on your best items while reducing the investment on the slowest movers. Your sales force will get better at pushing your 'A' items rather than trying to sell products and services that disrupt your operations.