

## LEAN INVENTORY

### Lean Inventory = More Cash

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In today's economy, cash is as critical as ever. Customers are delaying payments as long as possible, yet vendors want their money sooner and short term borrowing rates are still not as low as they were several years ago. With these types of pressures, many companies are looking for practical ways to free up cash. Manufacturers and distributors can improve their cash position by implementing lean concepts to reduce inventories.

What is "lean manufacturing?" Simply put, it is the production of goods using less of everything: labor, waste, space and most importantly less cash. Lean manufacturing is the type of topic that could require volumes of books to cover completely. There are a number of excellent books on the topic, including Dennis Hobbes' *Lean Manufacturing Implementation: A Complete Execution Manual for Any Size Manufacturer*. However, the basics can be fairly easily explained. In this article, I will focus on several key aspects that—when applied—can reduce inventory levels and free up cash.

Goods should be manufactured only after they are sold. There is no point in taking raw materials, adding value by converting them to finished goods and then having them sit in your warehouse for weeks or months before they are sold and converted back to cash. So a general rule in lean manufacturing is: only manufacture what you need to ship immediately; do not manufacture to stock. Resist the temptation to produce 10,000 units when only 500 are needed because the production costs per unit will be less. To achieve this, goods need to be manufactured in small batches. Production lines need to be flexible and dynamic. Set-up and change over times must be reduced.

Production using smaller batches provides for several key benefits: fewer raw materials in stock; less work in progress; less unnecessary movement of product; less time that any one unit spends in the process waiting to be worked on and less finished goods inventory consuming available cash.

Improved flow of product through the production process will reduce the number of units in the system and the time it takes to produce one unit from start to finish. This will reduce the inventory levels necessary to keep the system running. Common problems encountered are producing defective products, paperwork requirements, expediting to meet an unanticipated demand, storage of excess production and unnecessary movement of product. Excess inventory hides problems in the process. Bottlenecks are compensated for by overproduction and this simply leads to greater inefficiencies.

Higher initial production quality will improve the system flow. Identifying and dealing with defects and products requiring reworks is time consuming, wasteful and adds no additional value to a product. You are not able to charge the customer more for an item just because you spent twice as many hours on it to fix defects. It is always best to get it done right the first time. Simplified processes will lead to higher quality and smoother production flow. This starts with the product design and goes right through to the production processes utilized. The goal is to make the processes "idiot proof." For example, a unit should only fit into a jig one way. If it fits in more than one way, the employee needs to check that it is in right before performing the action to it. This creates the potential for error and adds time to the process without any added value.

Required raw material stock can be reduced by creating just-in-time delivery arrangements with major suppliers. These arrangements would require vendors to make smaller deliveries of materials more frequently to your production line. Many times, this type of arrangement requires the use of suppliers with facilities closer to your plant. Clearly, there could be challenges to having just-in-time relationship with an overseas supplier. Just-in-time arrangements apply not only to manufacturing companies but can easily be applied to many other businesses including retailers, distributors and service companies. A great example where the supplier manages the replenishment process is the baked goods vendor that makes daily deliveries to the grocery store ensuring that the space allotted for his product is properly stocked. This concept has application across many industries.

Reduce the carrying cost of inventory by eliminating excess and obsolete inventory. Some examples include, eliminating items no longer produced; checking existing inventories before reordering or scheduling production. In addition to the cash consumed by unneeded inventory, overcrowded and unorganized facilities create inefficiencies and waste. Moving inventory because it is in the way adds no value.

As has been demonstrated, lean manufacturing is a fairly simple concept, which when applied properly can have a positive impact for manufacturing, distribution and other businesses. In an economic climate where cash is king, all businesses should consider implementing a lean program. As with any change to operations, a smart business owner would include key operations managers, vendors, suppliers and customers in any discussion and would be sure to also seek counsel from his key business advisors.

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