the 3 Rules of inventory

and how to play by them

infoplus

Executive Summary:

Optimizing inventory levels has traditionally been a matter of answering the question, "How much inventory should we carry?" But this is not just an exercise in coming up with numbers; it requires having accurate real time data so that issues can be identified and dealt with before they affect operations. From this perspective, there are four situations your organization can encounter with regard to its inventory, and three of them are not good.

Outlined here are 3 Rules that, if followed closely, help organizations avoid costly processing problems.

How Much Inventory Should You Carry?

You need to carry inventory, and you're wondering how much you should carry. It's a common question, and it should have a simple answer.

Unfortunately, the logistics industry has done merchants a disservice by taking the question to be a literal one about stock numbers. But items in your inventory are like money in the bank:

The trouble occurs when you don't know how much you really have.

- In Q1 2014, desktop eCommerce sales in the U.S. amounted to $56.1 billion. [1]
- Warehousing and storage in the U.S. is currently a $22 billion industry, employing over 600,000 people. [2]
- An additional $9 billion and 60,000 employees handle order fulfillment alone. [3]
- 54% of companies are planning for an increase in order volume and number of SKUs. [4]
- Fewer than 30% of the warehouses in the U.S. are operating efficiently. [5]
- 40% use basic or legacy Warehouse Management Systems. 76% use what they feel is best-of-breed, full-featured systems. [6]
- 67% plan to take inventory with mobile or handheld devices. [7]

After spending years in the logistics game, the team at Infoplus has learned that, rather than a simple answer or formula, it's better to think of rules that can be used to answer questions about inventory levels. These rules have grown out of a realization that there are roughly four places you can be with regard to your inventory…and three of them are not good.

The Core Rules

The four situations can be thought of, roughly, as being Out of Stock, having Overstock, not having an accurate picture of your stock, and having an ideal picture of your stock.

These first three are all negative situations to be avoided; only the last situation is acceptable. But they also represent what can go wrong when certain core rules of inventory are ignored. While situations are specific, rules are general and apply to a number of different situations. Thinking of the core rules will help you to think clearly about your operations and how they can improve.

The three core rules are simple:

Rule #1 — Have Enough Inventory to Service Demand

Rule #2 — Don't Overstock

Rule #3 — Know Thy Inventory

Although simple, the rules can be difficult to adhere to in practice. For that reason, we break down the rules here, showing why they are important and how you can begin to form a strategy based on them.

Rule #1 Have Enough Inventory to Service Demand

This rule is born out of the first issue you can have with your inventory: items that are Out of Stock or in Low Stock. If you want your business to thrive, you never want to be in this position.

Here's why.

In the past, when inventory ran out, companies would simply issue a backorder while they purchased or manufactured more items. Customers would then simply wait for the item to be In Stock again.

> ...today's consumer is used to a **higher standard** of service...

But today's consumer is used to a higher standard of service, brought on by the promises of Amazon.com and other large internet retailers. This higher standard includes order processing within 24 hours, prompt shipping, and speedy delivery at low cost. Needless to say, consumers with these expectations do not tolerate backorders.

Case in point:

A photographer ordered some supplies and equipment needed to shoot a wedding in the coming week. The order was placed far enough ahead of time, and was processed right away. The photographer was delighted when the package arrived two days before the wedding...until she opened the box and saw that it contained only two of the three items she had ordered. Instead of the third item, there was a backorder slip saying that the part would be available in another three months. What could have been a loyal customer suddenly became a disgruntled, angry, and vocal non-customer. (And, for every vocal customer that leaves, there are scores of non-vocal customers who leave as well, for the same reasons.)

Another example:

A consumer is doing some last-minute gift shopping for his partner, who is really into designer handbags. He finds an online store specializing in smart bags, and what luck! Not only do they have a great selection, but the company is locally owned and operated (which the couple appreciates). He takes a risk and places an order. But once the order clears his cart, he receives an email saying that his selection is backordered. He is immediately back online, seeing if they have the same handbag on Amazon. What would have been a fan quickly jumps ship for a more convenient option.

These examples show that the question of how much inventory to carry is not just an academic exercise in coming up with some arbitrary number. It's an ongoing analysis, in part to make sure that backorders like these do not happen. To prevent them, you need to keep the right levels of inventory in stock—and know precisely when those levels are getting low, with enough lead time to do something about it.

Rule #2 Don't Overstock

When trying to determine ideal inventory levels, going Out of Stock is a bad thing—it leads to backorders, which stall the transaction and ultimately lead to unsatisfied consumers. Management's impulsive response to constant Out of Stock or Low Stock levels is to ramp up acquisition to build an inventory "cushion" (increasing On Hand quantities). But this situation can be just as bad for business.

Why?

For one thing, having lots of extra inventory means that you have capital tied up, not available for other things. Pinched cash flow makes doing business that much more difficult.

But there are hidden costs to having too much inventory as well. Lots of extra inventory means lots of warehousing—warehousing that would not be needed if your company had more realistic inventory levels. Extra inventory could also mean a shift in demand, meaning that the inventory must eventually be sold at a steep discount.

For example:

An online vendor specializing in cell phone batteries and accessories finds that they are routinely running low on cases and batteries for the latest model of a smartphone. To avoid this, they triple their order sizes...and the next order arrives two days after the smartphone company announces a newer model. The newer model has a different battery and is a different size, meaning that the old model cases will not fit. Over time, sales of the accessories for the older model drop off.

Now this vendor is left with excess inventory in the warehouse. What are the vendor's options?

Try to return the excess for a refund or credit
Some suppliers might work with merchants, giving them a refund or credit. But the refund or credit is rarely for the full amount spent, and the vendor is often on the hook for shipping the returned items.

Trade with other companies in the same space
Perhaps a competitor or discount seller would love the excess stock. While this frees warehouse space, the vendor might be selling goods at a steep discount.

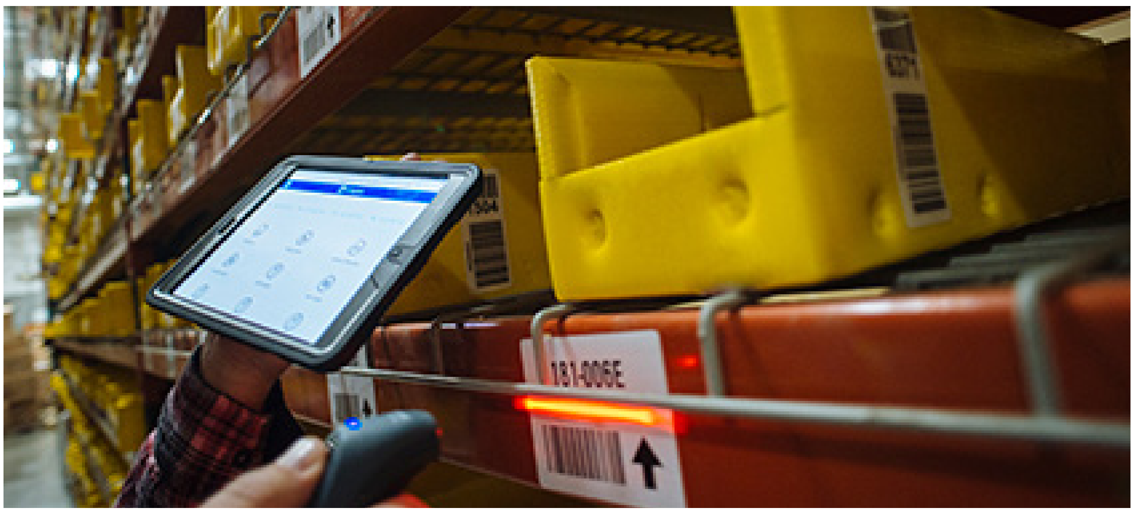
Liquidate or auction the items
While this gets rid of items quickly, the vendor will be selling their goods for pennies on the dollar.

Donate the items
The idea behind donation is to take a loss on the items themselves and recoup some of the cost via a tax deduction for charitable contribution. This works only with some items, however, and finding a charity that will take the stock can be difficult. Meanwhile, the vendor still has to store the items.

What this example shows is that Overstock can be a costly pain. There are many reasons why an item might stop moving: Seasons change, tastes change, a newer model comes out, and so on. If you have too much of a cushion, you might be stuck with items that never move.

Rule #3 Know Thy Inventory

Most times, having the right level of inventory is not the main problem. The main problem is knowing what your precise level of inventory is, and what state it is in. Having inaccurate data on your stock levels leads to a number of problems.



Imagine having just the right number of products for a certain SKU, given demand—but your team is working with old data and, based on that data, projects that your inventory will fall short of demand in a month. It is obvious what your team would do: begin the process of acquiring more inventory to make up the difference. Now there will be excess inventory, and you will be in an Overstock situation.

Now imagine the opposite:

Your data is not updated rapidly enough and misses a sudden surge in orders, which depletes your stock. The next week, you think that your warehouse has enough inventory to cover while you restock...until the warehouse manager calls, having run out of a popular item. Now you are in a backorder situation.

Over time, delays in acquiring data cause your warehouse to fluctuate between Overstock and Out of Stock situations. Floor space is taken up by non-moving items, but fast-moving items never seem to be on hand, creating congested warehouse floors and unnecessary delays.

Those are just the immediate problems. Not having access to good data about your inventory can ripple out and cause other inefficiencies:

- Inaccurate data on inventory make loss and theft harder to detect and prevent.
- Inaccurate stock levels are communicated to vendors and partners, causing supply chain problems.
- eCommerce sites and affiliates also get inaccurate data, creating missed sales opportunities or backorders, both of which damage the brand's reputation.

The utterly surprising twist here is that all of these things can happen even if you start out with absolutely perfect stock levels.

The Fourth Situation

At the start, it was suggested that there were four situations a business could encounter with regard to their inventory, and three of them were bad.

What about the fourth? What is the ideal situation?

In the ideal situation, you have just enough inventory to meet demand, given information about trends, season, target market tastes, and competitors. You also have real time data on all the crucial elements:

What SKUs do you have, and in what quantities?

There is more to know than just In Stock and Out of Stock too. For example, having an accurate picture of your inventory might require knowing an item's:

- On Hand Quantity
  (the quantity that exists in the warehouse, not including Open PO Quantity)
- Unavailable Quantity
  (the quantity of items that are frozen, and therefore unavailable, although not damaged)
- Open Order Quantity
  (the quantity of inventory on order, but not yet processed)
- Damaged Quantity
  (the quantity of inventory marked as damaged)
- Orderable Quantity
  (the quantity available for ordering once frozen and damaged items have been accounted for)

- A huge amount of capital is tied up in inventory: In 2013, it was worth approximately $1.1 trillion. That is equivalent to 7% of the U.S. GDP. Source: 2013 edition of the US Working Capital Survey. [8]
- U.S. retailers have about $1.43 worth of inventory for every $1 of sales they make in a given time period. Source: Supply Chain Digest. [9]

Where is each SKU located?

For example, knowing where each SKU is located, and how fast it moves, you can more easily optimize your floor space. Items that are frequently purchased together can be moved closer to each other, and fast-selling items can be put where they will be easiest for your staff to reach.

What's the lead time to order (or manufacture) each item?

This will help you determine how far out you need to plan, and when you need to reorder.

Is there enough labor force to move the stock when needed?

Products are not the only assets that need to be coordinated. Having appropriate quantities and floor placement will not matter if you do not have the labor necessary to move those items in a timely manner. This is why having real time data is important: Your organization can be made aware of spikes in demand and adjust the day's activities as needed.

In an ideal situation, your organization would have the tools to capture all of this data, subsequently using it to optimize stock levels and create optimal workflows at your facilities.

In sum, the question “How much inventory should I carry?” is not as simple as it seems, because the question encapsulates more than just stock levels. Knowing your actual stock levels—and more—is crucial. Without that knowledge, inventory will ping back and forth between too much and too little, causing all sorts of problems for your logistics. AND your customer service.

[1] “US: ComScore reports $56.1 billion in Q1 2014 e-commerce ...” 2016. 6 Apr. 2016 <https://evigo.com/13758-us-comscore-reports-56-1-billion-q1-2014-e-commerce-sales/>
[2] “Warehousing and Fulfillment Industry Statistics for the U.S. ...” 2015. 6 Apr. 2016 <http://www.globeconfreight.com/blog/warehousing-fulfillment-industry-statistics-u-s-market/>
[3] Ibid.
[4] “Trends—October 2013 - Inbound Logistics.” 2013. 6 Apr. 2016 <http://www.inboundlogistics.com/cms/article/trends-october-2013/>
[5] “McGinnis, LF. “Benchmarking Warehouse Performance - Industrial ...” 2002. <http://ise.tamu.edu/ideas/DEA06.pdf>
[6] “2014 Warehousing and DC Operations Statistics [Infographic].” 2014. 6 Apr. 2016 <http://www.newcastlesys.com/_blog/bid/348089/2014-Warehousing-and-DC-Operations-Statistics-Infographic>
[7] “2014 Warehousing and DC Operations Statistics [Infographic].” 2014. 6 Apr. 2016 <http://www.newcastlesys.com/blog/bid/348089/2014-Warehousing-and-DC-Operations-Statistics-Infographic>
[8] “2013 US Working Capital Survey - REL.” 2014. 6 Apr. 2016 <http://www.relconsultancy.com/working-capital/2013-US-Working-Capital-Survey.pdf>
[9] “Supply Chain Graphic of the Week: US Retail Inventories.” 2015. 6 Apr. 2016 <http://www.scdigest.com/assets/newsviews/15-04-23-1.php?cid=9231>