Inventory Management Techniques

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Contents

Introduction

Effective inventory management is crucial for the success of any online business.

Why?

Because without it, you stand to lose money due to dead stock and uneccessary storage costs, but even worse you stand to damage your reputation and risk marketplace suspension.

Ultimately, poor management of inventory can result in either stock-outs, that being an event where you run out of an item despite it being in demand, or having excess stock which again an come at a cost to your business.

Throughout this guide, we have detailed some of the most common (and effective) inventory management techniques and best practices that will not only help you get more from your business, but also enable you to improve efficiency and reduce costs.

Establishing Stocking Policies & Par Levels

One of the easiest ways to manage your inventory is by setting par levels, that being the amount of inventory that must be available at any given time.

Par levels, also known as Periodic Automatic Replenishment levels, can essentially be described as safety stock numbers. In other words, they represent the lowest stock level your inventory can reach before you need to reorder.

With an automated stock control system, this reorder point can be triggered automatically.

Ultimately, par levels help to ensure that your inventory remains above the standard demand rate and that you're not at risk of overselling or missing out on potential sales opportunities.

But what should the par level be?

The honest answer is that it will depend on the product, how quickly it sells and how long it takes to re-stock.

That said, we've provided an example below that will help you determine your own par levels which is also known as a reorder point formula.

(Average Daily Sales Volume x Lead Time) + Safety Stock = Reorder Point

So, next question; how do you work out your daily sales, delivery lead time and safety stock?

Safety Stock Formula

As we've already mentioned, online retailers carry safety stock in order to avoid stock-outs, which are often caused by changes in customer demand.

But how do you calculate safety stock?

To start with you need to calculate your lead time. In other words, the total time it takes to replensih stock.

As this number can often be inconsistent, it's important to consider actual lead time, as well as estimated lead time.

To do this, we would recommend taking data from a sample time period. The following example is based on purchase orders made over a three-month timeframe.

Expected Lead Time	Actual Lead Time	Variance
7 days	9 days	+2 days
7 days	7 days	0 days
7 days	10 days	+3 days
7 days	7 days	0 days
7 days	6 days	-1 days
7 days	9 days	+2 days

Using your own data, you will need to work out the variances based on the orders placed in your sample time period.

From the example above, we can see that the sum of variances is six.

This means that in total, it took six days longer than expected for orders to be delivered by the supplier or manufacturer in this time period.

To work out the average, we will need to divide the sum of variances by the number of orders placed in this timeframe.

Total Variances ÷ Number of Orders Placed = Average Variance

6 ÷ 6 = 1

Now that we've aware the actual lead time was a day longer than expected, this should be taken into consideration.

Using the above example, there is an expected lead time of seven days, plus a variance of an additional day, totalling eight days.

This number specifically signifies the amount of time it will take to restock a given item, while also considering the variability in the actual time orders have previously taken to be restocked.

Once you've worked out your lead time, you will need to calculate product demand.

More specifically, you will need to calculate how many sales you make on a daily basis.

Again, we would recommend using a similar time period as before, in this case three months.

Month	Sales Volume
1	1080
2	1140
3	1370

Next up, you will need to work out the average daily sales volume, by taking the sum of the total sales volume and dividing it by the number of buying days in this three month time period - in this case 92.

3590 ÷ 92 = 39

This calculation tells us that the average daily demand is 39 units.

So, you've now calculated daily product demand and lead time, which means you can calculate your safety stock level.

As a rule of thumb, it is recommended that you apply the 50% rule, which states that you should have an additional 50% of stock on top of your lead-time demand.

Lead-time demand is essentially your lead time multiplied by average daily sales. Using the same example above, your lead-time demand would be:

8 Days x 39 Units = 312 Units

Based on this calculation, safety stock levels at 50% would be 156 units.

Reorder Point Formula

Now that we have the lead time, daily sales volume and safety stock number, we can work out the reorder point calculation.

Given that the reorder point formula is...

(Average Daily Sales Volume x Lead Time) + Safety Stock = Reorder Point

...the actual calculation would be as follows:

312 + 156 = 468 Units

So, there you have it.

Assuming that your average lead time is 8 days, your average daily sales volume for the item in question is 39, and you're following the 50% safety stock rule (keep in mind that this can c hange), you should have 468 units in stock at any given time.

Have a Contingency Plan

When running a business, the first rule is to prepare for the unexpected.

As I'm sure you already know, problems arise when we least expect them, but failing to factor them into your plans can put your business at risk.

So, what are these potential problems?

And how can you prepare for them?

Below, we've listed some of the most common business challenges that can arise, and more specifically those that are likely to impact your inventory:

- An unexpected spike in sales
- Sales are great. The more the better, right?
- Well, not always.
- Especially if you've not prepared for them.

In fact, the best case scenario in these instances are that you experience a stock out, missing out on valuable sales.

Worst case, however, you oversell stock that you don't have, putting your business at risk of a damaged reputation, loss of revenue and marketplace suspension.

Already happened?
Find out how home & garden retailer, Rinkit, faced this exact challenge, took back control of their business and went onto grow a multi-million pound global brand.

The unfortunate reality is that things happen, and you won't always be in the driving seat of these changes.

Where possible, however, you should have a plan in action for any surges in sales, whether that be the result of an unexpected Amazon Buy Box win, the impact of any upcoming retail holidays, weather changes or even seasonal peaks that drive a higher demand for your products.

While safety stock can help to offset some of the impact of sales increases, we would recommend having an annual plan that factors in the above points.

Lack of storage space to accomodate inventory for seasonal sales increases

It's all well and good knowing that you need to stock more inventory, but what happens if you have limited warehouse space?

While you can (and probably should) optimise your warehouse space, this will only get you so far and you may need to think about alternative options.

As an example, if your business deals with seasonal demands, then you may want to think about using a third-party logistics provider (3PL) for extra warehouse space.

Not sure where to start? Have a look at this comprehensive list of fulfilment centres across the globe.

Slow moving products taking up valuable storage space

While a solution to limited warehouse space is to outsource fulfilment, there's also the case of certain inventory being sold - and therefore rotated - faster than others.

With this in mind, you need to work out which of your inventory is more valuable than others - not just in terms of price, but also demand.

The ABC inventory analysis method, covered later in this article, covers this in more detail.

Your supplier or manufacturer runs out of the product, or worse discontinues it without warning

While this is almost entirely out of your control, establishing strong relationships with your suppliers can certainly reduce the impact.

Not sure where to start?

Have a read of our complete guide to supplier relationship management with specific guidance on developing and maintaining these relationships.

First in First out

First in First out (FIFO) is a supply chain best practice that specifically refers to the sequence in which inventory is booked and subsequently dispatched.

While the operational use of FIFO is important for reducing obsolete inventory, First in First out is also a method of inventory valuation, with many companies operating this method irrespective of the actual flow of goods.

After all, ensuring that you're valuing your inventory as accurately as possible is imperative.

Why?

Because it allows you to simplify your financial analysis and better track your profit margins.

Think about it; the price of inventory continually increases, meaning that the price you pay for one batch of products could be different to the price you pay at a later date.

With this in mind, the FIFO inventory method allows you to more accurately align the cost of inventory with the current market value, reducing the impact of inflation.

More specifically, your most recently acquired stock can be sold at a price that better reflects this market value.

That's not the only benefit to using FIFO though.

First in First out

By dispatching your oldest stock first, you can also reduce the risk of product wastage.

While FIFO is more commonly used for managing expiry dates - in other words products with shorter shelf lives, such as food and beverage - items that are kept in storage for too long can also become tarnished or damaged.

First in First out prevents this from happening.

In terms of business profitability, FIFO also ensures that the older inventory cost is applied to the cost of goods sold, which in turn results in a lower expense on your income statement and a higher profit.

But what exactly is meant by Cost of Goods Sold?

While 'Sales' refers to the cost of the sale, 'Cost of Goods Sold' is a calculation of all the costs involved in selling a product. In other words, it considers the total cost of producing the products; materials, labour and any other related costs.

So, how do you calculate the Cost of Goods Sold?

While this measure can be found on your company's income statement, the calculation is:

Cost of inventory at the beginning of the year + Additional inventory costs (purchased during the year) - Cost of inventory at the end of the year = Cost of Goods Sold.

Let's assume you have £90,000 worth of inventory at the start of the year, but throughout the year you purchase an additional £175,000 worth of inventory.

At the end of the year, however, you are left with £120,000 worth of inventory.

Your Cost of Goods Sold calculation would therefore be:

£90,000 + £175,000 – £85,000 = £180,000

First Expired First Out

An alternative method to FIFO, First Expired First Out (FEFO) ensures that the products with the most imminent expiration date are shipped first.

If you sell perishable items such as food, beverage, cosmetics or pharmaceuticals, this could be an invaluable inventory management technique to consider.

More specifically, you should consider the use of an inventory management system with expiry date tracking capabilities to support this.

Just in Time (JIT) Ordering

Also known as lean manufacturing, just in time ordering is an inventory management technique designed to increase efficiency and cut costs.

More specifically, just in time inventory is the process of ordering and receiving stock as and when you need it.

But which types of companies does the JIT inventory method benefit? And what are the advantages?

Well, aside from freeing up cashflow for other uses as a result of having lower inventory holding costs, Just in Time (JIT) also frees up warehouse space, avoiding unnecessary storage costs.

With this in mind, it can be extremely beneficial for eCommerce businesses that build customised products, for instance furniture, luxury cars and even jewellery.

This technique isn't without its disadvantages though and won't be ideal for all industries.

Given that JIT essentially adds another step to the fulfilment process – purchasing the products only once a sale has been made – it leaves little room for error.

In fact, in addition to potential order fulfilment problems, there's also the risk of price shocks.

ABC Analysis

In reality, product demand is not distributed evenly between stock, which means that certain items are more of a priority when it comes to managing your inventory.

The ABC inventory control method therefore works by categorising stock into three categories; A, B and C.

More specifically, these classifications allow you as an online seller to divide your inventory depending demand, value and cost-significance.

A - High value products with a low frequency of sales

Category A represents the most valuable products you stock.

They will typically comprise a smaller amount of physical goods, but these goods will have a higher consumption value.

In fact, given that individual sales of these products can make a significant difference to your overall turnover, they require a far higher level of inventory control with more secure storage facilities in a bid to avoid damage and obsolesce. After all, these products are worth much more to the business.

As a result, they should be prioritised, with more effort being made to avoid these products going out-of-stock.

In most companies, these products represent around 10-20% of total inventory, yet contribute to around 70-80% of annual consumption value, highlighting just how important they are.

ABC Analysis

B - Moderate value products with a moderate frequency of sales

Category B items have a lower value than A, but higher than items with a C classification.

When thinking of this in terms of numbers, they tend to amount to around 30% of total inventory, while accounting for 15-20% of consumption value.

Ideally, you should have a sufficient amount of category B products in stock, but not too much that you're wasting storage space.

C - Low value products with a high frequency of sales

It should come as no surprise that category items have the lowest value.

In fact, while they account for around 50% of total inventory, their overall annual consumption value can be as low as 5%.

In terms of managing inventory, this means that re-ordering should happen a lot less frequently than other items due to low demand.

Ultimately, there are a number of benefits to using this ABC analysis technique for inventory management, the biggest one being better control of your highest priority items.

Dropshipping

Unlike the inventory management techniques outlined above, dropshipping enables you to run a business without carrying inventory or shipping the product yourself.

In other words, it allows you to eliminate the inventory management process altogether.

For more information on dropshipping, have a read of this getting started article.

Alternatively, take a look at this list of dropshipping companies.

So, there we have it.

Several techniques and best practices for managing your inventory, each designed to help you cut costs, free up warehouse space and streamline your business processes.

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