Everything you ever need to know about Stock Replenishment

Image credit: [Orderhive.com]

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Ever wondered how your nearby store never quite runs out of stock for necessary items?

Well, it is because he is restocking the items well before it goes out of stock.

But how does he do it? How did he know when to restock the items and in how much quantity? Are there any formulas to calculate the stock replenishment?

Yes, there are set rules for stock replenishment aka inventory replenishment and this article gives you a detailed insight into everything you ever need to know about Stock Replenishment - what is its standard definition, how to calculate the replenishment point, relevant strategies of restocking etc.

What is Stock Replenishment? Why is it important?

Stock replenishment is the most important activity in any business as it deals with restocking the items for sale.

Definition

Margaret Rouse defines replenishment as,

“Replenishment is the movement of inventory from upstream -- or reserve -- product storage locations to downstream -- or primary – storage, picking and shipment locations. The purpose of replenishment is to keep inventory flowing through the supply chain by maintaining efficient order and line item fill rates."

In layman's terms, stock replenishment is a general practice to make sure that the right quantity of the products are available at the right time with the vendor or shopkeeper on the picking shelves.

Did you know that as per a study conducted by Harvard Business Review,

> "72% of stock-outs were due to faulty in-store ordering and replenishing practices—retailers ordering too little or too late, generating inaccurate demand forecasts, or otherwise mismanaging inventory"

Such alarming percentage indicates that inventory replenishment must be conducted in timely fashion as well as in a systematic way.

In short,

> "A properly done Stock replenishment helps in eliminating stock-outs and overstocking - both of which can prove to be very costly in Supply Chain Management."

Inventory replenishment has a wider scope and includes ready-to-sell inventory as well as raw materials stock for manufacturing the finished products.

> "Restocking the items/products allows a businessman to run the business smoothly."

Methods of Stock Replenishment

1. Reorder Point Method

What is the reorder point ?

Image credit

> “A replenishment/reorder point is the unit quantity on hand that triggers the purchase of a predetermined amount of replenishment inventory.”

Reorder point hence becomes an indicator for the store keeper to restock the items that are finishing up in the store. It is similar to the fuel reserve indicator that you have in your motor car or bike so that you can refuel it before you run out of fuel while driving.

Once reorder point is hit, the shopkeeper places a new order for the items refillment so that he can fulfill his future orders successfully without any halt.

> “The end result being no interruption in production and fulfillment activities, while minimizing the total quantity of inventory on hand.”

However, one important aspect to keep in mind is that each item/product in the store can have a different reorder point as the reorder point is calculated on the basis of the time taken for your supplier to deliver the products to you.

This brings us to the next important topic.

How to calculate reorder point?

For calculating reorder point you need lead time, average daily usage rate or selling rate of the product and safety stock with the vendor.

Lead time - is the time taken for the supplier to send the products once the vendor places the purchase order of items.

Average Daily sold units of the product - means on an average the quantity of goods sold on a daily basis.

Safety stock - is a specific quantity of products kept aside so that they can be used in the times of emergency or during stock outs.

The formula for calculating reorder point is

(Average daily sold units x Lead time)

For instance, Star Mobile Shop sells 25 units of Samsung Smartphones everyday and his supplier takes 4 days to send a fresh stock of Samsung smartphones then what should be the reorder point for Star Mobile shop?

Therefore, using the above formula:

25 (average rate of daily sold units) x 4 days (lead time)= 100

The answer is 100 units need to be replenished by the Star Mobile shop from his supplier every 4 days.

However, in the above example we are only considering an average number of units sold per day. In reality, this number can increase somedays or decrease some days because we all know that sales are fluctuating every day. So to cover up the sudden rise and fall in the demand for the product a company or shop needs to keep a safety stock. Hence, the reorder point formula can also include safety stock

(Average daily units sold x Delivery Lead time) + Safety stock

Continuing with our example of Star Mobile shop and using this reframed formula,

(25 x 4) + 25 = 125

Thus, we get inventory reorder point as 125 units. If Star Mobile Shop's stock for Samsung Smartphones falls below 125 units, then a new order should be placed.

At this point it is crucial to understand the reorder point only indicates the quantity at which you should place a new order for restocking the item(s). But for knowing how much quantity of a product must be ordered you need to use other methods like Economic Order Quantity method or Just-in-time method.

2. Periodic Stock Replenishment Method

> In periodic stock replenishment method the inventory levels of the products are reviewed at a set time period. Depending on specific inventory needs, a replenishment order can be placed or not, but only at the review point.

This method is ideal for restocking the items in a warehouse. Since Warehouse has a larger storage capacity, it can store items that can last for 3 to 6 months. Hence, periodic check/review is sufficient for the items stocked in the warehouse and the inventory levels of these items are looked at to see if they need to be restocked. In case, the inventory levels are good enough then there is no need to reorder the stock.

However, the down side of this method is that in case, if the inventory levels of one of the items is about to get exhausted, the vendor or the supplier might not know of it since he will count the inventory only at the stipulated time period. Also, some manufacturers or vendors do not reorder the items even if they are out of stock until the counting cycle ends since the restocking orders are placed only after the predetermined intervals.

3. Top off Method

Top off is one of the popular replenishing methods, it is a.k.a or lean time replenishment method. In this method, the stock is replenished when the picking operations are less active therefore, it is easier to review the stock and replenish it as per a predetermined threshold.

> This is the most convenient method for retailers because it is the most efficient way to restock the fast moving SKUs.

Since the stock count is done then and there during less active operations hours, the replenishment can be done on daily or alternate days or weekly basis as per the requirement.

This method improves efficiency during peak periods as well since the items are always refilled in the forward pick locations during the slow demand periods.

4. On-Demand Replenishment Method

Image credit

Another popular method of replenishment used by retailers is the On- Demand method. The vendor or shopkeeper basically restocks the items that are in high demand. Which means that other products might not be given a priority since they are slow moving items.

Now don’t get me wrong even wholesalers might be using this method but mostly small retailers practice this often.

Though this method might sound simple it is not as easy as it sounds! It requires careful pre-planning and forecasting the demand of the products in the near future so that you can stock it in appropriate numbers.

> This method is ideal for seasonal products since there is high demand for a seasonal item only during a particular time of the year.

Sometimes, the demand for a particular item can skyrocket so much during the peak season that you definitely need to have a safety stock. For instance, the demand for Christmas trees is quite high during the Christmas times or demand for Pumpkins during Halloween. Safety stock enables you to adapt to the market fluctuations easily and keep a good balance between supply and demand.

Best practices for stock replenishment

Image credit: orderhive.com

There are a few things that you should consider doing regularly so that the required inventory/stock is available whenever you need it on the shelves. Here are few of those best practices for inventory/stock replenishment to keep in mind.

Regular stock counting

Stocktaking or stock counting is one of the most common practices that all retailers, vendors and manufacturers do on a regular basis.

Stocktaking at specific intervals helps in avoiding stock-outs, over stocking, stock theft, and stock shrinkages. Also, it will enable you to get the total number of each product(s) you possess on-hand, hence, it helps you in accurate tracking of inventory.

If any of the products are less in quantity then you will get a clear idea to go ahead and reorder them so that your business is not disrupted. Stock counting not only helps in identifying which items are getting sold the most but also let's you predict which commodities are in demand based on their higher sales.

There are various ways in which you can do stock counting such as cycle counting, periodic stocktaking, spot checks, Barcode scanning etc. You can pick a method that suits your business the best.

This also brings us to our next important inventory control practice.

Demand forecasting

The current and the past sales data is resourceful since it gives you an idea on which products are selling like hot pancakes and which products are low-selling. This knowledge of sales helps you in restocking the items as per their demands.

You can also forecast the demand on the basis of consumer behaviour. For example, during Christmas times the demand for Christmas trees and ornaments rises to its peak.

So it is a good idea to restock these items in adequate quantity in the months before Christmas time. However, stocking the same amount of Christmas trees and ornaments in Summer would be wastage of your money and storage space.

Therefore, *the key is to restock the items according to the demand forecasted by both your previous sales data and consumer demand.*

Reliable Suppliers

Having the stock of items supplied to you in quantity you need and the right time when you need it is essential for your business therefore, buy the products from a supplier who is dependable.

However, while selecting a supplier you must also *choose the one that provides a quality product consistently at the right time in the right quantities*.

It is a good practice to have more than one supplier in case if you're dealing in essential commodities. Since they're in high demand and you can't risk going out of stock due to supplier's delay in delivering the goods.

Now, we already learned about different methods to restock the inventory and its importance but how many times do you restock your items in a year? Knowing this is essential as it determines the success of your business and helps in planning your resources and finances for the coming year.

So, how exactly can you count the turnover of your inventory in a year?

It's simple, you can do it by calculating your inventory turnover ratio.

What is the inventory turnover ratio? And the easiest way to calculate it

According to Wikipedia,

> *"The Inventory turnover is a measure of the number of times inventory is sold or used in a time period, such as a year. It is calculated to see if a business has an excessive inventory in comparison to its sales level."*

In a layman's term, inventory turnover is the number of times the products are replenished by the retailer or businessperson to keep his/her business running smoothly without going out-of-stock or over-stocking the products.

But how to determine as to how many times you need to re-stock the items you're selling? Luckily, there's a way to calculate it.

If you're having trouble understanding all the weird formulas floating around for calculating the inventory turnover ratio, then this is a must read for you.

I will show you exactly how to calculate the inventory turnover in the easiest and yet accurate way possible in this article.

> *"If you have lower than a ten percent turnover, there is a problem. And if you have higher than, say 20%, there is a problem."*
> - *William Mcgovern*

So keeping this in mind, the key is to strike a balance! But how exactly does one do that?

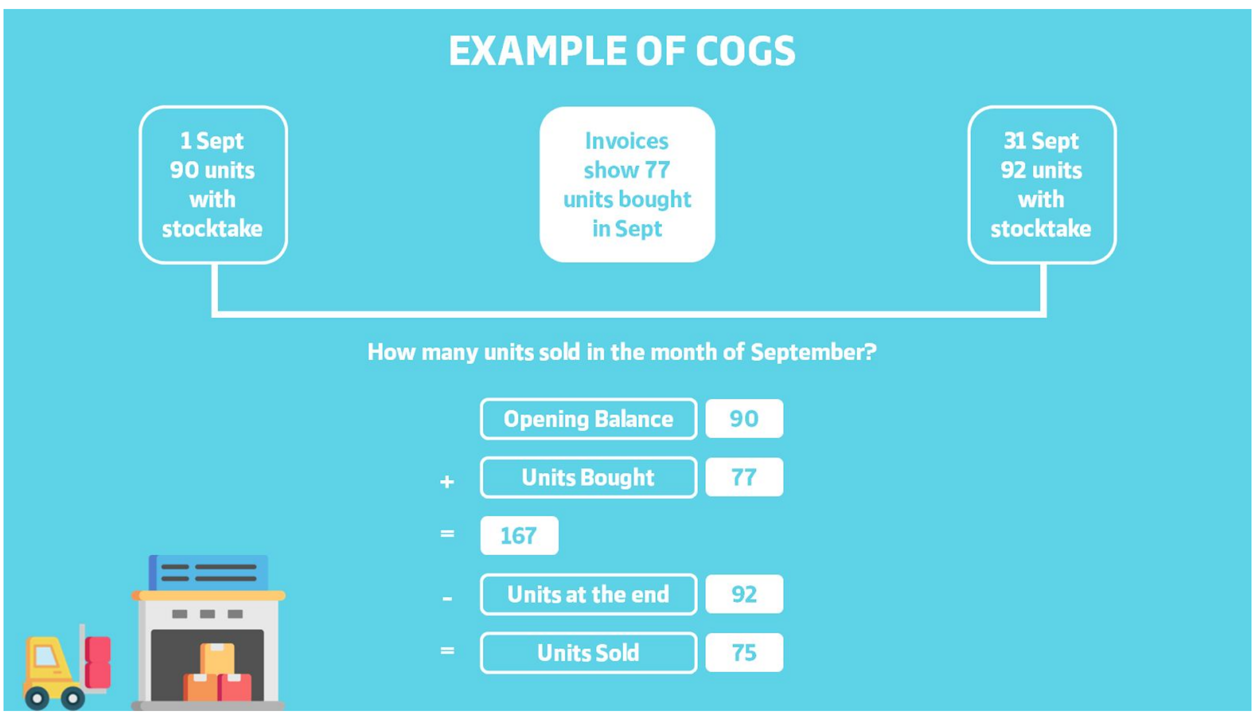
There are multiple formulas to calculate inventory turnover ratio but the most commonly used formula that is effective enough in predicting the turnover is -

Inventory turnover = Cost of goods sold / average inventory

Now don't let this formula boggle your mind. We will split it up so that you can understand it better.

Firstly, we will need the Cost of goods sold. For getting this detail we will need the stock count of the inventory at the beginning and end of the month. So let's learn how to calculate the Cost of Goods Sold (COGS) first of all,

Calculating the Cost of goods becomes easy when we use the given formula:



Beginning inventory cost + purchases - Ending inventory cost = Cost of Goods Sold (COGS)

To understand this formula better, let's take a look at a practical example, For instance, a retailer named Exotic Perfumeries is selling premium perfume for $100, and he has 90 such packs at the starting of September,

so the total cost of our goods is 100 x 90 = $9000

Let's call this 'Beginning Inventory of the month'.

Now, it is a good business practice to take a stock count at the end of every month. During the stocktake at the end of that very month, Exotic Perfumeries has 92 packs of premium perfumes.

so the total Cost of our goods is 100 x 92 = $9200

Let's call this the 'Ending inventory of the month'.

Technically, this is not possible without buying new stock in the middle of the month...right? So, let's take a look at our invoices and check how many purchases we did in September. By looking at the invoices, we get to know that 77 packs of premium perfumes were purchased at the cost of $100 each.
Therefore, 77 x 100 = $ 7700

Let's call this as 'Purchases.'

Now that we have got the required values, let's put our COGS formula to work:

Beginning inventory cost + purchases - Ending inventory cost = COGS

Therefore, as per our above example,

$9000 (beginning inventory cost) + $7700 (Purchases) - $9200 (ending inventory cost) = $ 7500 (COGS)

Hence, our Cost of the Goods Sold (COGS) value is $ 7500. Which indicates we have already halfway up to getting to our inventory turnover.

Now, coming on to the second part of our inventory turnover formula. We need to get a particular number for the average inventory. For this, we will again use an easy formula.

Simply add the inventory stock at the beginning and end of the month and then divide it by 2.

$$\text{Average inventory} = \frac{\text{Beginning inventory + ending inventory}}{2}$$

$$\text{Therefore, } \frac{9000 + 9200}{2} = 18200/2 = 9100$$

Hence, our average inventory is 9100

Now that we have got values for both COGS and average inventory,

let's apply our inventory turnover formula,

Inventory turnover = Cost of goods sold / average inventory

7500/9100= 1.213

This means that the retailer is turning over the inventory once every month.

Significance of inventory turnover ratio

All businesses can flourish successfully if they have proper in-flow and out-go of cash and inventory. It is like the more goods you sell, the better profits you make and therefore, not going out-of-stock is very important, but at the same time, you can't overstock your products as well, as that would mean blocking your funds.

Hence, it is essential to maintain a certain amount of stock for running a business smoothly, and the inventory turnover ratio helps in determining how much stock you should keep for doing your business.

The higher the turnover ratio, the higher the risks of overstocking the inventory. The lower the turnover ratio, the higher the risk of going out-of-stock.

A retailer can increase his/her business profitability by improving its inventory turnover.

Ideal inventory turnover ratio for a company

To conclude, all businesses are different, and hence they all have different inventory turnover, but it is ideal for a business to replenish their stores 12-13 times in a year. That is just how many times our illustrated company, Exotic Perfumeries, will replenish their product in the store.

I hope this helps you in replenishing your inventory successfully!

Final Takeaways

Inventory or stock replenishment is the most ignored part of the supply chain but nonetheless is an essential part and requires a lot of focus if you wish to succeed in your business.

Hope this article has helped you in understanding the importance of doing restock in an orderly fashion. Let us know your thoughts in the comments. We'd love to hear from you.

Essential Resources:

Articles:

https://hbr.org/2005/03/inventory-driven-costs
https://hbr.org/2001/05/the-achilles-heel-of-supply-chain-management
https://europepmc.org/article/med/11184971
https://pdfs.semanticscholar.org/cd61/43f68b6d6c8ee48816b1bd92f63e526ff4fd.pdf
https://gmdhsoftware.com/documentation-sl/inventory-replenishment-strategies#replenishment_strategies_and_lot-sizing_methods
https://www.repsly.com/blog/inventory-replenishment-definition-explanation-best-practices
https://retail-assist.co.uk/best-practice-retail-replenishment/
https://www.scribd.com/doc/117997601/Inventory-Replenishment-Models

Videos:

- How to calculate inventory turnover easily
  https://www.youtube.com/watch?v=Ophz0_bkUAg

- Advance Inventory Replenishment: Concepts
  https://www.youtube.com/watch?v=Uq-_ucu77yw