

Fast-Moving, Slow-Moving and Non-Moving Inventory (FSN technique)



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Introduction

Black Champion U. Miller has explained the term 'Inventory' as "expandable physical articles held for resale, for use in manufacturing a product or for consumption in carrying on business activity"

Industries in the modern world are facing extreme pressure as the trends and likings of consumers change even before they are able to predict it. Inventory and warehouse managers need to respond proactively as the trends change in fact they are needed to be a step ahead of the consumer.

Although it is a bitter truth, it's true that the industry with good demand forecasting and inventory management techniques can any day overtake a company with better quality products but having flawed demand forecasting abilities.

Inventory management's goal is to increase profits and performance of the entire supply chain and order fulfillment process by articulately forecasting demand, reducing inventory carrying cost, managing quality, and increasing the value of the inventory. Moreover, they should ensure that the products inside are the ones that would generate profits.

Online or offline retailers will never invest money in holding an inventory that doesn't bring in revenues frequently. And therefore, you need to analyze the movements and functioning of products through the supply chain and order fulfillment process.

In this write-up, I will be discussing one such inventory analysis technique called the FSN technique that helps you identify the fast-moving, slow-moving, and non-moving products. So if you want to know how to do, FSN analysis read on-

What is Fast - Moving, Slow - Moving and Non - Moving Inventory Management Technique

Also known as the FSN analysis, Fast moving, the slow-moving and non-moving inventory method is about segregating products based on their consumption rate, quantity, and the rate at which the inventory is used.

Fast-moving inventory, as the name suggests, comprises the stock that moves quickly and needs to be replenished very often. Generally, the stock that lies in this category has an inventory turnover ratio of more than 3 and constitutes around 10-15% of the total inventory.

Slow-moving inventory is the inventory that crawls slowly through the supply chain and has an inventory turnover ratio between 1-3. It is generally 30-35% of the total stock.

The inventory that rarely moves with the inventory turnover ratio below 1 and makes 60-65% of the total stock is called the Non-moving inventory.



How to Identify the FSN Inventory - FSN Analysis

Inventory can be classified based on different parameters like consumption rate, average stay, annual demand percentage, reorder frequency, and how repeatedly the products are used or moved from their location.

To figure out which product falls under which category you need to calculate the parameters mentioned above, like average stay and consumption rate during a period. The formula for the average stay and consumption rate is -

Average stay = cumulative no. of inventory holding days [or unit of time] ÷ (total quantity of items received + opening balance)

Consumption rate = Total issue quantity ÷ Total period duration

After the calculation of the average stay and consumption rate is done, then the calculation of cumulative average stay and cumulative consumption rate is carried out, followed by deriving the percentages of both. And then, with the help of these percentages, we can identify and segregate the products into FS & N.

Cumulative average stay = average stay of item + average stays of all items that stay longer in inventory than itself

Cumulative consumption rate = consumption rate of item + consumption rate of all items consumed faster than itself

Percentage average stay = (cumulative average stay of item ÷ cumulative average stay of all items) x 100

Percentage consumption rate = (cumulative consumption rate of item ÷ cumulative consumption rate of all items) x 100

According to cumulative average stays -

- Fast-moving products are 10% or less of the average cumulative stay.
- Slow-moving stocks are 20% of the average cumulative stay.
- Non-moving items constitute around 70% of the average cumulative stay.

This means that the fast-moving products stay only 10% or less of the average stay of the inventory and hence travels quickly through the supply chain.

According to consumption rates the FSN can be categorized as -

- Fast-moving inventory is 70% of the average consumption rate
- Slow-moving inventory is 20% of the average consumption rate
- Non-moving inventory is 10% or less of the average consumption rate.

The consumption rate of the F products will always be high because of the apparent reason that they are sold quickly and have a higher inventory turnover ratio.

To make sure that FSN analysis is accurate, you need to take both averages stays in inventory and consumption rate of the products into account. This determines the final FSN status of the stock based on which you make decisions for your inventory management and inventory forecasting.

Let's take an example to understand how the calculation is done.

Let's carry out the analysis for ten materials, and the time duration to be for 10 days. Below is the calculation of the item with SKU01.

Opening balance - 40

Date	Receipt quantity	Issue quantity	Return quantity	Adjustment quantity	Closing balance	Inventory holding days
01/1/2020	10	05	00	00	45	45
02/1/2020	00	05	00	00	40	85
03/1/2020	15	00	05	00	60	145
04/1/2020	00	10	00	00	50	195
05/1/2020	20	05	00	00	65	260
06/1/2020	10	00	00	00	75	335
07/1/2020	00	20	00	00	55	385
08/1/2020	20	10	00	00	65	450
09/1/2020	10	00	00	00	75	525
10/1/2020	00	10	00	+6	71	596
Total	85	65	05	6+		

Now,

The average stay of the material = cumulative no. of inventory holding days [or unit of time] ÷ (total quantity of items received + opening balance)

So, the Average stay of the material is = 596/125

= 4.76 days

We also have to calculate the consumption rate which

Consumption rate of the material = Total issue quantity ÷ Total period duration

= 65/10

= 6.5 Nos/ day

The next step would be listing down of all the 10 materials with their average stays and consumption rates

Item code	Average Stay	Consumption Rate
01	4.76	6.5
02	6.5	4.2
03	8	3
04	3.63	7
05	7.69	5.23
06	10	1.23
07	12.45	2.5
08	6.76	5.64
09	9.6	3.39
10	5.14	7.86

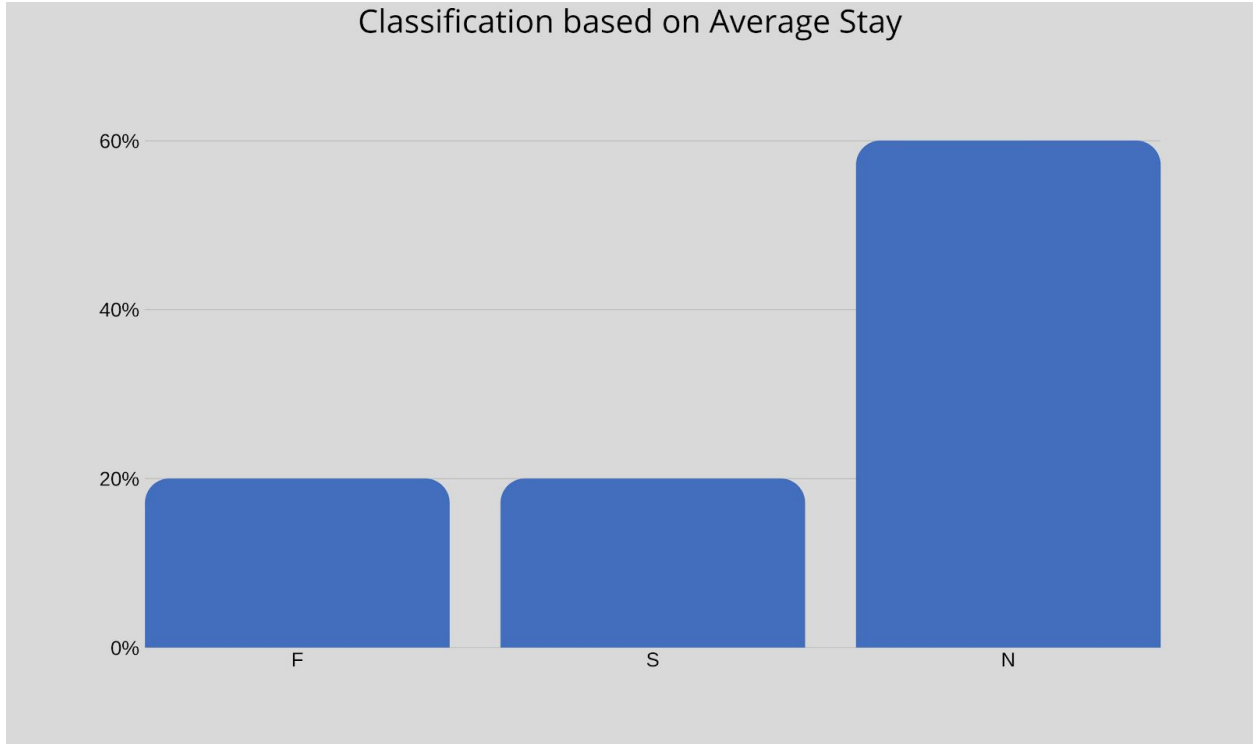
Now classifying the products on the basis of cumulative average stay percentage by arranging them in descending order with the highest number of average stay on the top.

F= 10% or less

S = 20%

N = 70%

Item Code	Average Stay	Cumulative avg stay	% average stay	FSN classification
07	12.45	12.45	16.704	N
06	10	22.45	30.12	N
09	9.6	32.05	43.00	N
03	8	40.05	53.73	N
05	7.69	47.74	64.054	N
08	6.76	54.5	73.12	S
02	6.5	61	81.84	S
10	5.14	66.14	88.74	S
01	4.76	70.9	95.12	F
04	3.63	74.53	100	F

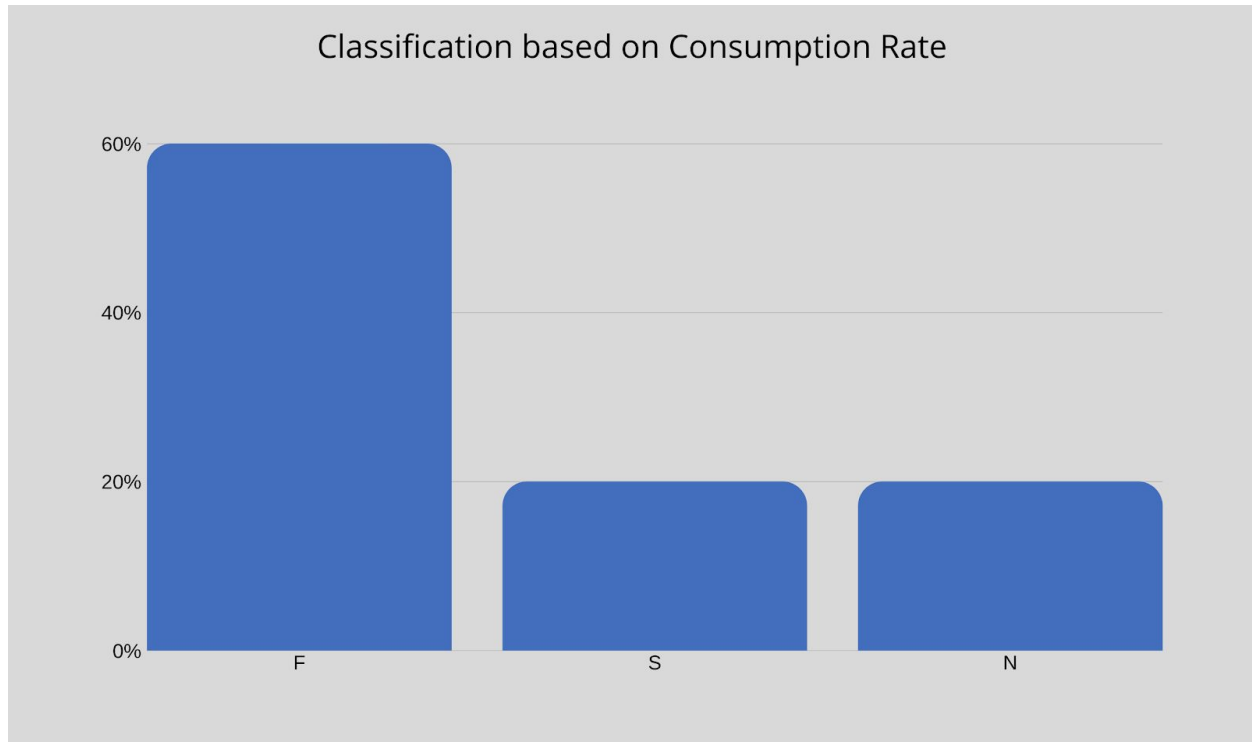


*This graph is for demonstration purposes only, generally in average stay ,the F = 10%, S = 20%, N = 70%

Similarly, the subsequent step is to classify the inventory concerning the consumption rate.

Item Code	Consumption Rate	Cumulative consumption rate	% Consumption rate	FSN Classification
10	7.86	7.86	16.88	F
04	7	14.86	31.92	F
01	6.5	21.36	45.89	F
08	5.64	27	58.00	F
05	5.23	32.23	69.23	F
02	4.2	36.43	78.25	F

09	3.39	39.82	85.54	S
03	3	42.82	91.98	S
07	2.5	45.32	97.35	N
06	1.23	46.55	100	N

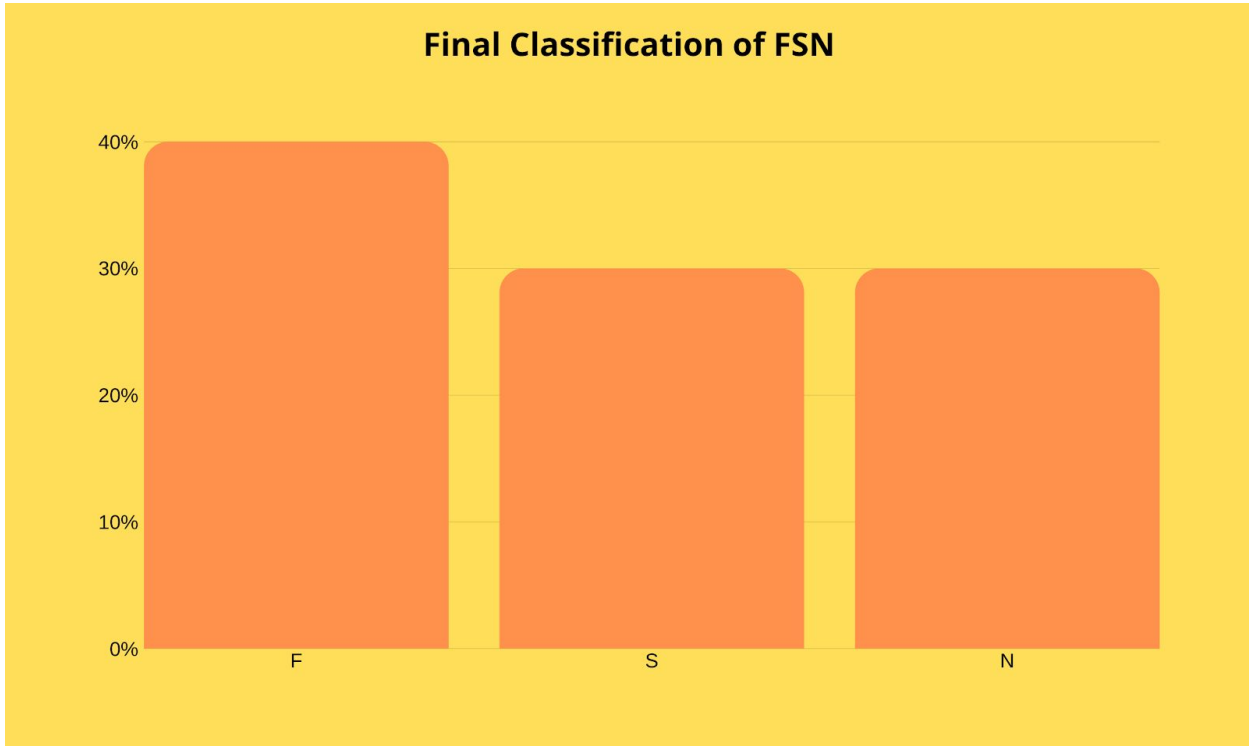


*This graph is for demonstration purposes only, generally in consumption rate ,the F = 70%, S = 20%, N = 10%

The final classification is conducted by combining both of the results of segregation achieved above.

Item Code	FSN (consumption rate)	FSN (Average stay)	Final FSN classification
01	F	F	F
02	F	S	F

03	S	N	S
04	F	F	F
05	F	N	S
06	N	N	N
07	N	N	N
08	F	S	S
09	S	N	N
10	F	S	F



*This graph is for demonstration purposes only.

Why You Should Use FSN Analysis Technique - Advantages

As you saw in the above example, you can calculate the average time spent by a product in the warehouse and the consumption rate, and this data can help you a lot in

managing your inventory efficiently. Below is the list of reasons explaining the importance of the FSN technique.

- An easy way to find dead stock and reduce its accumulation in the inventory
- An effective way to categorize inventory in a way that the categories in which the products are kept say a lot about the behavior of the product in a supply chain
- The technique also empowers the retailers to decide on the future of the business of each product, whether to increase the purchase of a particular product or to not
- A fantastic technique to find the active products in the inventory and also if you carry the analysis regularly you can see the trends shifting from one product to another
- This information about changing patterns can help you in handling those products and keeping the inventory updated
- The products that don't need to spend money on are easily spotted
- Getting rid of the non-moving products at the correct time to avoid the inventory carrying cost, and replace those products with the products that bring in the profits also becomes uncomplicated as you know the products that aren't doing well
- This also enables you to keep fast-moving products at the location in the warehouse that is more accessible

Disadvantages

The major disadvantage of this technique is that it is a calculation that is based on formulas and information provided by you, so the issue is the information, or even a single human error can flaw the calculations.

This can lead to wrong analysis, and you are managing your inventory based on that faulty outcome. You could consider a slow-moving product as a fast-moving product and tell your supplier to send more of it. However, then you realize there isn't much demand for that product. So, there is a loophole in this technique.

Also, sudden changing trends in the inventory are very tough to figure out with this technique alone as you have to calculate again and again.

To know about FNS analysis through a video watch the below-given youtube video

<https://www.youtube.com/watch?v=tUa4FgeC7u8>

Conclusion

If you want to segregate the inventory and figure out the demand or movement of products, this is one of the best techniques; however, the companies use a combination of ABC analysis, FSN analysis, and VED to classify their products depending on their needs.

I hope you can learn the FNS analysis technique from the above-given information. There are many advantages of this method, like a better understanding of the product's motion and conduct so that you can forecast your inventory effectively and decrease inventory carrying costs and increase the bottom line.

Properly using this method can take you ahead of your competitors in a whisker.

However, don't forget the disadvantages as a small error can lead to a misunderstanding that can cost you money and time both. Also, going out of stock can lead to consumers getting diverted to your competitors.

And at last, here's a tip that I want to give you. Use an inventory management software that can spare you from the efforts of classifying the inventory and keeping track of it manually. Take a [15 day free trial](#) of an automated inventory management software to see if you like it or not.

“Non moving inventory is like a mole in a business that does nothing yet does a job of increasing your inventory carrying cost, decreasing your bottom line and devaluing your invested money”

Essential Resources

- <https://mywestford.com/blog/fsn-analysis-in-inventory-management/>
- <https://www.ginesys.in/blog/how-identify-fast-moving-and-slow-moving-stock-0>
- <https://esbfedu.com/blog/top-inventory-management-tools-and-techniques/>
- <https://www.ijraset.com/files/serve.php?FID=6196>
- <http://knowscm.blogspot.com/2008/04/how-to-do-fsn-analysis.html>