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# Seven Leading KPIs for Inventory Analysis (Part Two)

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The first part of this article described the importance of inventory analysis and how inventory is seen as an asset and a liability by different stakeholders. Without context, it's impossible to qualify inventory. Let's suppose, the financial statements of a business show inventory valued at 17 million dollars. That fact by itself does not tell you if 17 million USD is good or bad. Without more information, you don't know if that business should do anything differently. Let's add another fact: The inventory balance in dollars is equal to the annual sales of the company.

Again, the facts don't give you enough information to make decisions to change what the company is doing. Perhaps one turn of inventory per year is appropriate for that business. If the company is in the business of manufacturing heavy machinery and the production cycle takes a year, the one turn per year might be acceptable. However, what if I tell you this is the financial statement of a quick commerce business. You certainly do not want to hold inventory equal to the total turns of inventory per year. Inventory is best measured and analysed at the lowest unit of measure, using aggregations in time may lead to erroneous conclusions.



## Factor to Measure Inventory

There are several factors to consider when measuring and analysing inventory.

### Customer and operationally driven factors

- ▶ The demand for the product
- ▶ The manufacturing cycle time
- ▶ The supply chain lead time for raw materials and components
- ▶ The shelf life of the products
- ▶ The age of the inventory

### Financially driven factors

- ▶ The carrying cost of the inventory
- ▶ The cost of the inventory
- ▶ The company's requirement for timing of cash flow
- ▶ Valuation

Now, lets zoom into each of these factors.

- ▶ **The demand for the product:** This is critical because it is referring to who wants your product, when they want it, and how much they want. Notice that you need to forecast the demand.
- ▶ **The manufacturing cycle time:** This involves how long it takes to manufacture, assemble, package, and deliver the products.
- ▶ **The supply chain lead time for raw materials and components:** This is the time it takes to get the raw materials and/or components to your place of manufacturing and assembly, in order to build new inventory when it's needed.

- ▶ **The shelf life of the products:** How long the product will last after it's made. For example, a cake may have a shelf life of four days, while a knife may have an indefinite shelf life because it does not go bad after a period. Shelf life may refer to the ingredients, as in the previous example; however, it may also refer to the life of a style or trend.
- ▶ **The age of the inventory:** This can be referred to as days on hand using a forward-looking forecast. It can also refer to how long you kept the inventory on hand, using the receipt date. This is related to shelf-life factors as well as valuation.
- ▶ **The carrying cost of the inventory:** The cost of carrying inventory includes:
  - The cost of locations you need to keep it in (warehouses and so on)
  - The costs to move the inventory (forklifts, trucks, people, and so on)
  - The cost to finance the difference between the time you pay for the inventory and the time you convert it into cash.
  - Cost of insurance against loss.
- ▶ **The cost of the inventory:** The actual cost of the components and finished products. It is related to the carrying cost and the cash flow factors of inventory.
- ▶ **The company's requirement for timing of cash flow:** The timing of cash flow in and out of a business is heavily dependent on inventory movement. You need to know if the timing of converting inventory into cash meets your requirements to make cash payments.
- ▶ **Valuation:** This is the net value reported in your financial statements. It is equal to the amount you paid for the item less any reserve you may have taken against the amount paid for various reasons.

I have described the major factors when measuring and analyzing inventory. However, I must mention that at times, it is possible we need to conduct a detailed drill down analysis on inventory data and this may require other data points.



An example may better help understand the point. Let's consider a scenario where we want to analyse which products have excess balances in the inventory, in comparison to historical sales. We will need following calculations.

- ▶ Detailed drill-down analysis of the current on-hand balances, as well as a 12-month history of inventory.
- ▶ Calculations of months on hand and inventory turns, made by comparing current on-hand balances with the historical sales.
- ▶ A special logic of adjusting historical sales quantities for the periods of promotions. During promotions, sales volumes were inflated beyond the norm due to promotional pricing and incentives. All sales quantities that were recorded during promotion periods need to be divided by a special factor.
- ▶ A detailed analysis of inventory aging. The inventory balances need to be divided into age buckets. The age needs to be calculated based on the current balances and the history of receiving transactions.
- ▶ A historical analysis of inventory and months on hand. The same KPIs need to be produced for the current date, as well as for any month end in the 24-month history.

- ▶ An easy way to understand the relationship between the inventory balances and the customers who purchased the corresponding product in the past. The application should allow users to select a customer and to see the list of products that the customer purchased in the past, along with the current inventory balances for the same products. On the other hand, it should be possible to select a product and see the list of customers who purchased the same product, along with their sales history.

Now that I have discussed the importance of inventory analysis and factors considered in inventory analysis, I next present some leading KPIs for inventory analysis in the next article. Hang on.

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