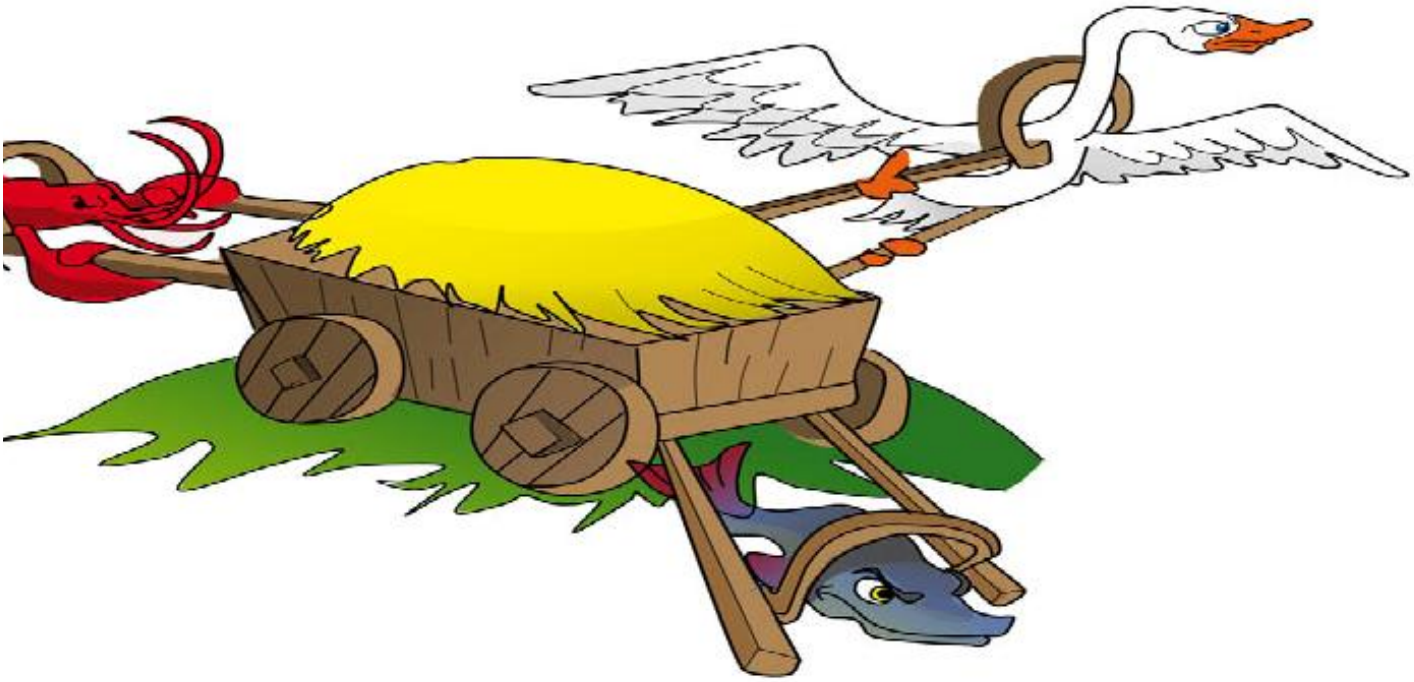

Criteria for Effective Inventory Management

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In practice, management when evaluating inventory, is often dealing with many operational and, financial figures. Those figures and the resultant statements will often represent the mix of different views that managers have on inventory management, and therefore, they will not always represent the more common used evaluations. This only tends to happen because the tasks of different departments conflict; for example, the financial department is interested in the low values in contrast to commercial department, who are more interested in availability and giving customer service.

Most often the following figures are often used:

- Turnover coefficient
- Service level performance
- Return on sales percentage
- Sales plan fulfillment performance
- Suppliers performance (on time, in full)
- Reductions in superfluous inventory
- Stock check/counting accuracy percentage
- Number of returns.

The above figures will evaluate inventory management of a trading buy-sell organization. However, these figures, are just the one “shadow” of the inventory management system so, we do really need to consider how they relate to other variables, for example, making an inventory reduction could bring shortages and therefore impact on customer service etc.

Requirements for effective figures

In developing figures we need to be guided by those principles:

- The sufficiency to give a complex and holistic evaluation.
- The practicality for management action.
- The conformity to the aims of a firm, such as profit and return on capital (ROI).
- The ability to be simply calculated.
- The reliability of calculation.

Hence the **return on inventory** could serve as holistic figure that could be obtained using this formula:

ROInventory=(Margin Sold-Order Costs)/Ave.Inventory, whereas we could use the following:

ROInventory – return on inventory, Margin Sold - goods sold evaluated in sales prices minus the same goods in purchase prices, Order Costs – what you actually save if you are able to save a voyage to your supplier, Ave. inventory – average inventory taken with its purchase price.

This is a variant of widely accepted ROI figure that is often used in common evaluation of investments in business as it closely correlates to shareholders value. However in the supply chain, managers may well not consider costs that are irrelevant to decisions they have to make such as overhead costs, fixed assets, debtors and creditors debts and so on.

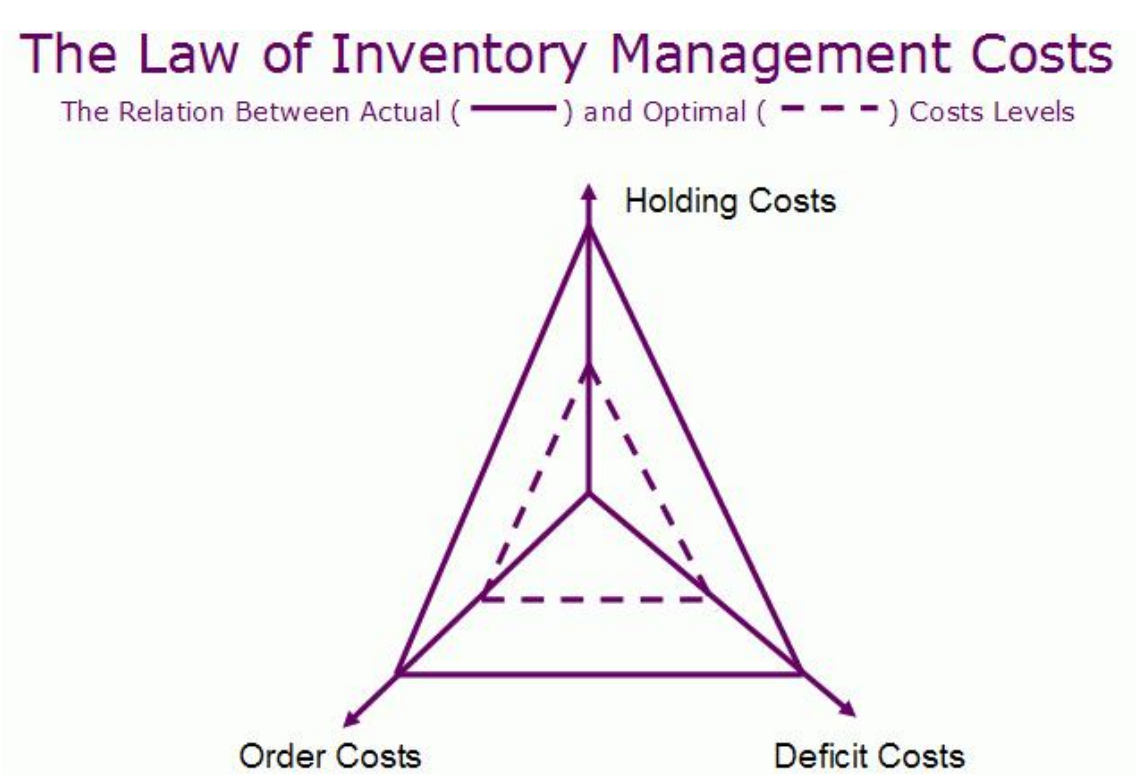
Furthermore the value of the ROI figure also depends on three main types of costs that are considered in inventory management theory: **order costs, holding costs and deficit costs** [1].

- Order costs are those that directly depend on number of orders made to supply inventory (transportation costs, costs of documentation and communication, quality checking and accepting an order in a warehouse and so on).

- Deficit costs are lost profit because of commodity absence in a warehouse.

- When we create our inventory we also need to know that our firm carries alternative loss. Here Holding costs mainly loose us profit for example, we lose the use of our capital so the cost of binding capital, or the base (normal, necessary) profitability from capital investments to a stock. It is also called simply the opportunity cost. The investments in stock may also give us a gain, if they bring more return then the alternative usage of the limited capital we have available. Therefore, we should be sure that by investing capital in inventory, we remove the opportunity to use that capital in alternative ways (such as building new plant, assortment exploration, purchase of new equipment, transport, bank deposits and so on).

Picture 1 shows 3 scales, where those three types of costs are depicted. The size of triangle shows how optimal is inventory management system. A smaller triangle means the costs are less and the return on inventory is higher.



Pic.1 "Swan, pike and crayfish" of inventory management.

Inventory optimization

In practice inventory management is limited by the board policy and / or the dictates and directives of the CEO, for example:

- *"Too much inventory. Stop buying it".* Unfortunately, such comments are a blanket/cover all expression that effectively means stopping ordering every commodity, even those that are sold regularly! The result is that warehouses have stock than no one wants and very soon, they have no stock for what customers actually want.

- "*We need to get rid from all this stock as soon as possible".* This directive is also very predictable as it commonly comes after the annual stock check; unfortunately, it is often forgotten very soon! So after 12 month warehouses once again will have more superfluous inventory; this then accumulates over the years so that eventually you will need a new warehouse to hold the excess stock. [2].

The optimization of inventory costs demands that you use inner law of inventory forming that is depicted in picture 1. And it could be unachievable by easy means; a firm continues to suffer from deficits having too much excess inventory.

So a reduction of inventory with the same order frequency is difficult to achieve as there will actually be a growth in inventory investment. Trials to reduce inventory will only come from placing more frequent orders

but then with possibly, a payment of higher transport costs.

The one time optimization with total cost reduction and ROInventory maximization is provided by the work of special tools, for example, the SIMPLE-System. Here a user can “provide any form of the triangle”, for example, to reach a maximum reduction whilst keeping the same value for the other two criteria. Meanwhile SIMPLE-System will also take the job of demand forecasting, stock limiting, controlling inventory and providing ready orders of necessary assortment quantities in the needed requirements, as any other inventory management system but allocating circulation capital as profitable as possible.

References

[1] The task of supply chain management is reducing stock in all stages of supply chain with the growth of service levels and reduction of deficits. The task of its functional field – inventory management is reducing 3 types of costs (order, holding, deficit costs). See for example, The Portable MBA/Eliza G.C.Collins, Mary Anne Devanna p.cm.HD 31.C.6134.1990.- 386 pp.

[2] http://effectiveinventory.com/non-moving-inventory/