

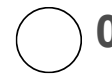
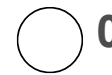
Optimal Inventory Limits for an “Ideal” Supply Chain

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This article gives a vision of how inventory management links the economics of the supply chain. It will also show we may actually limit the role of logistics and supply chain departments in a company's organizational structure.

Why inventory is so important?

Inventory not only ties up limited cash, it also influences the return on shareholders' capital. So inventory is both an investment and is also profit source for any supply chain organization. It is therefore, an everyday problem for management. Inventory should fulfill its function – to be available to satisfy immediate needs, not to use much capital and not to be re-supplied too frequently and so its size should be optimal.

Furthermore, the importance of optimal inventory limiting corporate plans are difficult to be

overestimated, simply because they will determine the stock investments, the variety and product assortment as well as the sale price for which customers, which suppliers to be used, the finances, the transportation modes and the warehouse locations.

Let us consider a case:

A well-known supplier of frozen products gave low purchase prices, but dictated minimal stock and order sizes at “privileged” distributors. One of these distributors however, had various suppliers, and was overstocked with similar products.

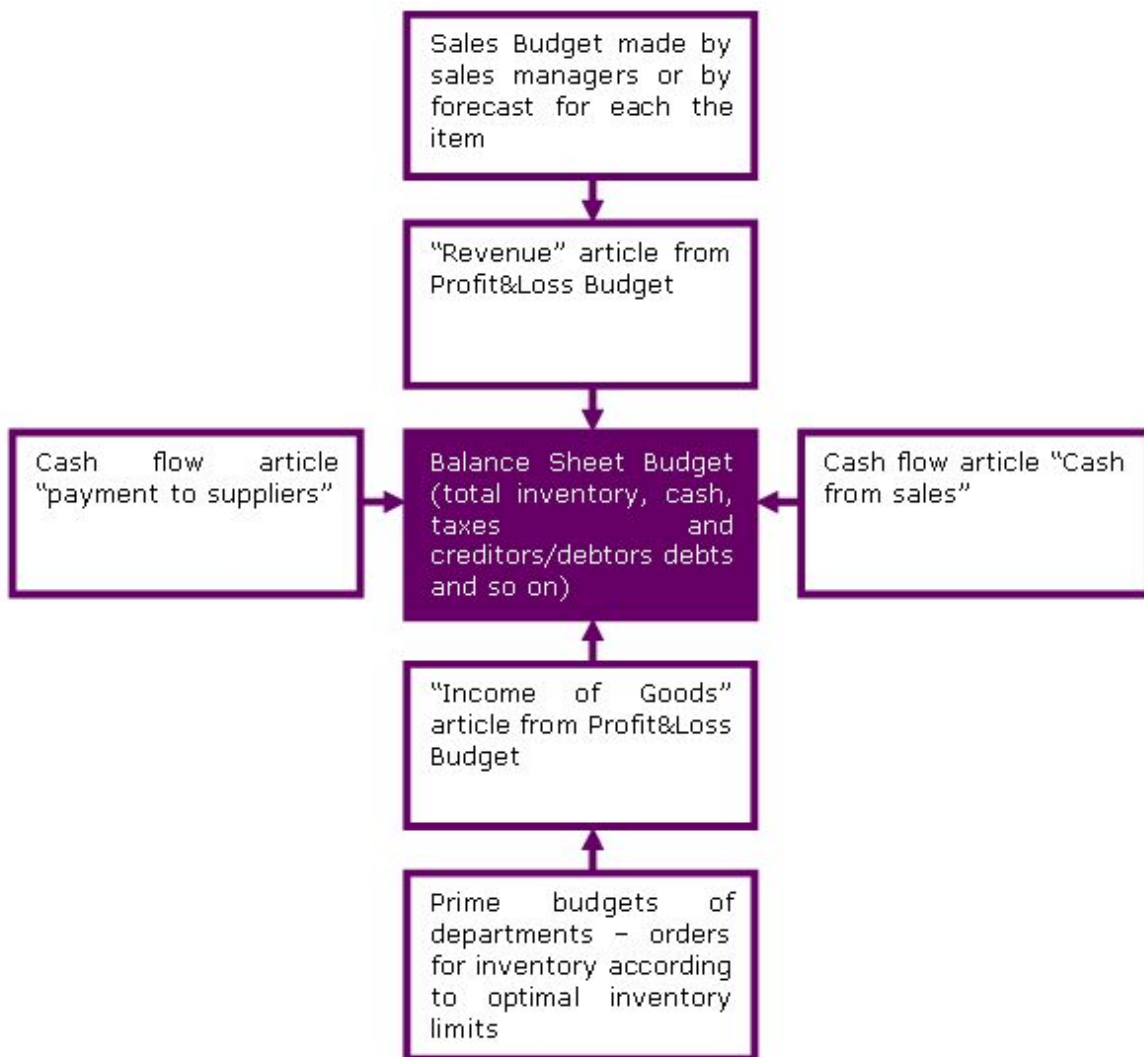
Closer traditional analysis showed that their return on stock investments was less than for the other suppliers, despite the low prices. Moreover, analysis of conditions and optimal stock limits calculations, showed that even having optimal inventory with the same conditions, gave a lower return on inventory investments (as demand for those products was unstable requiring more safety stock and also the terms of payment were not good). Management therefore decided to demand better conditions from the supplier.

However, they could come to the same conclusion earlier if they had made calculations based on optimal inventory limits. And the same is also true for their strategic choice of warehouses, transportation and customers marketing plans as well as for the variety/assortment. Price plans are also strategic and inter-functional as they are being tied to optimal inventory. For example, an item with higher sales margin, asks for higher service levels and stock.

So when we choose to add to price lists, we may better evaluate it (based on optimal stock limits calculation) if it gives a positive return on inventory investments (ROII). With or without an optimal inventory management policy, we might want to change the price and then re-evaluate optimal inventory limits and optimal ROII for the new price.

Traditional analysis results are only known after the event, and are a product of optimal inventory limits. The systematic inventory limits based approach however is more proactive and correct for planning, as well as for later “change and deviation” analysis. It is also useful in salesman and purchasers staff motivation.

Main financial plans



Finally, when we prepare all of the common financial plans (balance sheet, profit/loss and cash flow plans) we might want to apply optimal stock limits and the associated commodity movement plan-graphs. Furthermore, it could be useful to time-phase these plans with the supplies of optimal orders tied with sales and profit plans. Cash flow charts are common when we evaluate the IRR (internal rates of return) in strategic investments plans, including logistical infrastructure investments. Optimal stock calculations could be also helpful here.

To be continued

Refences. Genobium.com