

Scientific Inventory Management for Paper Mills

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Paper mills in India have a high value of capital locked up in inventories. On a industry sales of about Rs. 500 crores, it is estimated that the capital locked up in inventories is around Rs. 100-150 crores. This is a large sum of money which does not generate profits. The reduction in inventory means additional capital available which can be reinvested to yield higher returns and improve the cash flows. A high inventory also consumes storage space with associated costs.

OBJECTIVE

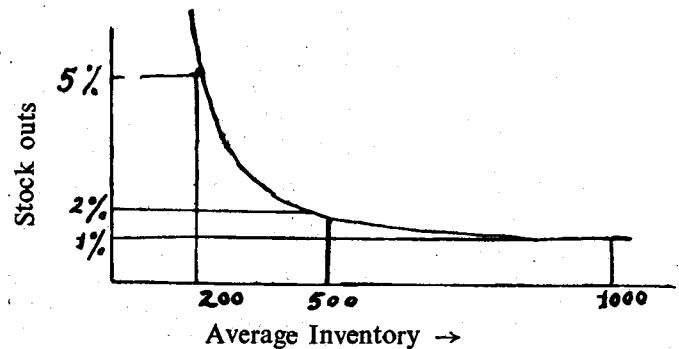
The objective of this paper is to create an awareness in management to constantly monitor and control inventories in coordination with various other departments, such as stores and purchase department, production planning, finance, sales and maintenance department, etc. It is normally thought that inventory control is a function of stores and purchase department only. This can lead to only sub-optimisation. To set realistic and practical levels for stocking, the importance of coordination can not be under estimated.

INVENTORY CONTROL

The first step in inventory control for a paper mill is to review its inventories of raw materials, work-in-progress, finished goods, chemicals, stores and spares etc. An estimate of annual requirements can be obtained from sales or demand forecasts and the production planning. The existing stocks can be calculated as a percentage of annual requirements to get an idea of how much the stocks are.

The inventory control cell should set up maximum and minimum limits for the major items in the inventory based on consumption levels in terms of quantity as well as value. These limits have to be set very carefully taking into account such factors as lead time for procurement, fluctuations or variance in the lead time and availability of materials during various months of the year. For example wood, bamboo, etc have highly seasonal availability and it is preferable to buy and stock them during the

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season when prices are low. The Tandon Committee on Working Capital Management of Reserve Bank of India, mentions raw material inventory of 2-6 months for paper mills. The actual figure will have to be worked out for each individual mill, but would vary with output. In fixing the limits to avoid stock-outs one must keep in mind the law of diminishing returns which operates as inventories are increased beyond a level. As the average inventory increases, the probability of stock outs decreases at a slower rate.

The demand pattern usually follows normal distribution in case of factory items. Hence it is sufficient to know the average demand (μ) and the standard deviation (σ) to calculate what inventory level to fix for a particular level of probability of stock-out.

BALANCING INVENTORIES

The objective of any inventory control is:

- to decrease inventories,
- to decrease stock-outs.

This problem is quite common in business, specially having a high volume of inventory handling. The idea is to identify the high value and critical items by ABC analysis based on unit costs and UED analysis based on criticality of items. A formal inventory management system can cause both reduction of inventory as well as reduction of stock-outs. This may seem paradoxical but it is true because in an informal inventory management system, certain items may be over-

stocked while some others are under-stocked. It is much better to compare lost profits rather than lost sales while comparing it to cost of maintaining inventory.

SET TARGETS

The company should set targets to reduce its inventory costs. One target can be to reduce the inventory by 10% of the existing level in the first year. For a large paper mill with an inventory in all stages of process of around Rs. 5 crores it will mean a reduction of Rs. 50 lakhs. Taking a modest figure of 20% as interest and cost of storage, it can mean a saving of approximately Rs. 10 lakhs which is additional profit. Further reduction can be done in second year, third year, and so on. The idea should be to obtain a high inventory turnover figure.

Another area normally ignored is the accumulation of obsolete items in the stores. Periodic review of stores would reveal items which may not have been ordered during the last five years. Such items unnecessarily burden the inventories. Possibilities to dispose them off should be explored.

CONCLUSION

Inventory control and monitoring is a function which requires joint participation of stores, purchase, production planning, and sales and maintenance departments to set levels for various items. It is possible in most companies to reduce or balance inventories using modern scientific techniques to cause reduction in costs. Use of mini-computers and other electronic data processing facilities is suggested.

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