



Assignment No:6

Raw Material Management

1. Assignment Description

Raw materials are one of the major costs in the production process. Raw materials can be purchased from one out of three suppliers. Each supplier maintains different commercial terms.

The main challenge with raw materials is that while the raw materials are in the firm's inventory and waiting for their use in the production process some of the raw materials evaporate. The quantity of evaporation is relative to the amount of the raw material stock.

The purpose of the assignment is to build an optimal plan for raw material orders. The plan should take into consideration the following aspects:

- How much raw materials are needed during the eight quarters
- Fixed and variable cost of the raw materials ordered from the selected supplier
- Evaporation of raw material

It should also be noted that raw materials should be ordered one quarter ahead of their use. Thus raw materials for the 2nd quarter should be ordered in the first quarter and so on and so forth.

2. Background Theory

The theoretical frame work for this assignment is based on the T.O.Q model. For example see : http://en.wikipedia.org/wiki/Economic_order_quantity

According to this theory, the firm should issue an order when the level of stock reaches the low level and the quantity should be enough to refill the stock to the high level.

The situation in The Green State is not this standardized and the firm should take into consideration many other aspects.



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3. Data Source

- Build a production plan with the following quantities:

Quarter	Product 1	Product 2
1	30,000	10,000
2	25,000	5,000
3	40,000	15,000
4	50,000	20,000

- Build a firm that supports this plan
- Build a raw material orders plan for the above production plan
- Run a simulation for eight quarters and record the raw materials costing

4. Analysis Required

1. What is the average cost of raw materials per unit of Product 1 and Product 2.
2. What is the loss rate of raw materials while in inventory?
3. If a future contract with the raw material supplier can be used, which supplier is preferred?
4. What are the main risks in the proposed plan?