

Inventory management in an indian fmcg sector finance essay

[Finance](#)



**ASSIGN
BUSTER**

As we move further in the seemingly promising 21st century and make claims of manifold growth and development for all, Managing inventory in distribution systems involves taking decisions on the quantity and Order frequency of inventory to be placed at different stages so that a desired customer service level can be achieved at minimum cost. In this paper, I present the case of the distribution system of an Indian FMCG Company, whilst having centralized control takes replenishment decisions based on local stock information. The objective of the study is to develop single and multi period representative models based on installation stock and multi echelon stock, and show by simulation that had the company take decisions based on system stock information, it would have saved monetary value in terms of investment in inventory. Table of Contents

Introduction

Statement of Project

The Project aims to quantify the desirable impacts of having the right quantity/level of inventory at different stages of the distribution system in the FMCG sector like Manufacturer, Buffer Warehouse, distributor, Wholesaler, Retailer.

Purpose

Handling and planning stock in submission systems involves getting choices on the quantity of stock to be placed at different levels such that a desired client support stage can be achieved at minimum price. If most of the stock is placed at the smallest stage or the stage experiencing external demand, the client support stage improves; however, this is followed by an increase in

the stock holding price due to value addition at the lower levels of the submission program. On the other hand, if most of the stock is placed away from the smallest stage, the stock holding price reduces, but simultaneously the delivery lead time improves, leading to the destruction of the client support stage. A trade-off between these two counteracting issues has to be made while getting choices on the placement and variety of stock in a submission program.

Significance of study

While assessment of the performance of industries in implementing inventory based strategies will provide us with an overview of the progress companies have made in recognizing huge inventory concerns within their supply chain and the extent to which they have sincerely adopted to measure to check and reduce inventory and increase service levels, it also provides information about the familiarity of the managers towards the adaptive inventory management practices and how some of them have achieved successful implementation of inventory based strategies in the distribution system in an FMCG sector.

Literature Review

There are two kinds of control in a submission system – primary and decentralized. In a primary control system, the option producer at the greatest stage selects on how much to buy and how to invest the available inventory among the downstream locations based on an echelon inventory strategy, where echelon inventory at a position is the inventory at that position plus the stock(Including in-transit) at all of its downstream locations.

The whole available inventory can be allocated or some inventory can be organized returning after distribution out most of it at the begin of each buy design, and provided later in the design to balance the shares at the downstream locations. A unique submission system was analyzed by Sunil, where inventory at the higher stage was organized for certain downstream locations as need occurred. One of the primary outcomes of the analysis was that a certain quantity of inventory should be organized at the higher stages, but most of the inventory should be located downstream. Actually, having inventory at higher stages is sensible if the inventory having price is very low and/or the submission cause periods are little. In a decentralized control system, every position requires replenishment options on its own. The options can be taken based on either an echelon inventory or an set up inventory strategy framework. Set up inventory at a position symbolizes the inventory at that position. It has been described in the fictional performs that in successive and set up methods one can always discover an echelon inventory strategy which is at least as excellent as an set up inventory strategy, but in submission methods the recommendations can outperform each other under different handling conditions. One of the issues with an set up inventory strategy is that the need submission at every higher stage is to be created. This can be avoided with an echelon inventory strategy, which needs only the end-item need submission.

2. Distribution system of the dairy division

Currently the organization does not have a development service for its milk whitener and dairy items products; instead it outsources its specifications from another milk, and offers them through traditional submission programs.

<https://assignbuster.com/inventory-management-in-an-indian-fmcg-sector-finance-essay/>

The milk has a agreement with the organization such that the business's current specifications can be met within a few months. The various Stock Keeping Models (SKUs) are delivered from the manufacturer to the Holding and For- warding Providers (C&FAs), and from the C&FAs to the Approved Merchants (A/Ws), which comprises the main revenue of the organization. The Approved Merchants in turn sell the SKUs to suppliers, separate wholesalers and organizations such as resorts and dining places, which comprises the additional revenue. The organization manages the main shipping between the manufacturer and the C&FAs as well as the additional shipping between the C&FAs and the A/Ws. The transport systems for milk whitener and dairy items are different since dairy items needs chilled transport and needs cold storage at the C&FAs and A/Ws. Fig. 1 reveals the submission system of the milk items. The distribution network is divided into four regions. The headquarters of the eastern region is located in Calcutta. There are 8 C&FAs and aroundFrom now on, the C&FAs and A/Ws will be referred to as " depots" and " distributors" respectively, as they are commonly called by the company personnel.

3. Present ordering/inventory control policy

At the starting of each 30 days, the company makes a main revenue strategy for each distributor, based on its additional revenue in the previous 30 days and the current stock accessibility. The main revenue plans for all the suppliers are then translated into overall specifications for the 30 days, and orders are placed with the milk with dispatch schedules for various depots. The milk operates with a three months' rolling strategy, and is capable of meeting the current specifications of the company. The average

transportation time from the milk to the Calcutta store is 20 days. The store ordering policy is as follows. Based on the main revenue strategy and the accessibility to stock at the store, the order quantity is calculated as follows: order quantity = main revenue strategy (including inter-depot transfers) - accessibility + preferred ending balance. For the Calcutta store, the preferred ending balance is 25 days' planned product revenue. The suppliers are also stocked in such a way that at the starting of each 30 days they have around 30 days' stock. The movement of stock closely follows the consumers' buying patterns, which peak during the first and last weeks of each 30 days. For both main and additional revenue, the last 10 days' revenue accounts for 40-45% of total revenue in the 30 days. From the above discussion it is readily visible that the combined stock of the Calcutta store and its suppliers at the starting of each 30 days is equivalent to 55 days' additional revenue. This brings out the fact that the suppliers are always holding one month's stock in excess. The business's policy is to push stock to expedite additional revenue under stock pressure. Though this fulfils the business's target for main revenue for the 30 days, it results in the suppliers holding over stock.

4. Description of the system under study

As a model, the Calcutta store and three of its suppliers, which consideration for most of the revenue from the store, are regarded for the research. This is comparative to a two-echelon submission program, proven in Fig. 2, with the store at the greater echelon and the suppliers at the reduced echelon.

5. Simulation procedure and models used for simulation

The store places purchase with the dairy at the starting of each 30 days, after knowing the real additional revenue in the previous 30 days and current accessibility to inventory at the distributors' ends. The supply are received around Twentieth of the 30 days. So, to serve the requirements of the suppliers before the supply are realized, the store plans in such a way that it has 25-30 days' inventory at the starting of each 30 days. In the starting of Jan 2001, when the simulator starts, the preliminary inventory levels at the suppliers are presumed to be similar to their corresponding safety values. The preliminary store inventory is set at a level equivalent to 20 days' mixed need predictions for the suppliers. For each 30 days, the transaction quantities for the suppliers and the store are calculated depending on the model being used. The main need for the 30 days is similar to the mixed purchase variety of the suppliers. For additional requirements two cases are considered. In the first situation, additional requirements are normal unique factors with factors obtained as per the supposition made in Section 4, and 1000 fakes are performed to arrive at the expected month-end store and supplier stocks. The second situation is a specific instance where additional requirements are denoted by the real additional revenue numbers for the corresponding 30 days. During the simulator, it is presumed that whenever a supplier encounters lack, it is refreshed with the lack amount by the store immediately, provided that the store has sufficient inventory for the 30 days (opening balance plus receivables). Finally, the primary/secondary revenue numbers, and the month-end stocks for the store and the suppliers are calculated. The flowchart of the simulator is shown in

Figure 3 The three distributors and the depot are represented by stage 1, stage 2, stage 3 and stage 4 respectively. Before discussing the models, the following symbols are noted. μ_j -Average demand in a period at stage j σ_j - Standard deviation of demand in a period at stage j h_j -Holding cost per unit per period at stage j p_j -Shortage cost per unit at stage j l_j -Lead time at stage j S_j -Order-up-to level at stage j k_j -Safety factor at stage j x_j -Inventory position at stage j T -Review period (one month in this case) $\Phi(\cdot)$ -Cumulative distribution function of the standard normal distribution

5. 1 Single period myopic model based on installation inventory

In this design, the choice is taken for the present 30 days without providing any weight to the predicted product sales styles for the arriving several weeks. Also, the depot's purchasing choice is based on its own stock, without considering the distributors' stock roles.

5. 2 Single period myopic model based on echelon inventory

This model differs from the previous model in that the replenishment decision for the depot is taken based on the secondary sales forecast and the depot echelon inventory level.

METHODOLOGY

A study set of questions was designed with four main factors impacting the maintainable inventory further having various Signs & Sub-Indicators. This study set of questions was being loaded by the various several production areas to find out the durability performance of various production areas towards Green future. More than 50 participants have happily taken part in

this study protecting Small, Small and Medium, Large Businesses. Most of the respondent's replies were received through telephonic conversations and via online survey. There are probable errors that will follow the Survey. We have given special attention in minimizing the following types of errors.

Random Sampling Error: This is the error between the random samples taken and the actual literature that has been performed previously. We have tried to minimize the difference to as little as possible. **The Error of Non-Response:** It does happen sometime that a person does not want to fill the survey. In this case even if he does, he may give biased answers or may just randomly answers questions. Hence our survey has been filled only by those who are keenly interested in the same. **The Error of Self-Selected Sample:** The sample selected should be one which is totally random. Normally, the tendency is to have a self- selected sample so that the survey becomes easy. In our case we tried that the questionnaire was answered by someone who has knowledge and authority of his organization. Apart from primary data, secondary data regarding the Inventory Management practices in Indian FMCG companies was also taken into consideration. The source of secondary data was primarily research papers, news and text books.

Research Framework

Research Assumptions Respondents will answer a survey truthfully. Those questionnaires which were more than 80% filled are considered as a full filled questionnaire.

Size of firm

Profitability

Safety Stock

Speculative Stock

In Transit Stock

Cycle Stock

Theoretical Framework

Distributor Behaviour

Satisfied Customer Service Levels

Location and routing

Industry type

The stock circulation control system provides information to efficient manage the circulation of materials, effectively utilize people and equipment, organize internal activities. A well handled stock circulation control that customers receive the products when they need them, in the amounts they need, and with the consistent top quality they expect. Inventory circulation control allows the control team to match the stock to client need, while conference the systems goals for capacity, efficiency and efficiency.

INVENTORY AND SKU'S Before talking about how to achieve a strong stock circulation, let us first determine several stock terms. Inventory includes four types of stock. 1. CYCLE STOCK: Pattern stock is the amount of stock needed to fulfill basic client need. 2. IN TRANSIT STOCK: On the road stock that is refocus between places that carry stock. 3. SPECULATIVE STOCK: speculative stock is the additional needed to fulfill a unusually high temporary need for <https://assignbuster.com/inventory-management-in-an-indian-fmcg-sector-finance-essay/>

the product. 4. SAFETY STOCK: safety stock is the quantity of stock in excess of cycle stock that is handled to make up for concerns in need and replenishment.

Findings and Results

Discussion of the simulation results

Table 1 reveals the predicted month-end store set up stocks acquired by applying the two models described in the previous section when secondary demands are normal random factors. Fig. 4 reveals the 30 days wise differences between the predicted store stocks acquired from the design depending on echelon stock and the same acquired from the design depending on set up stock.

Fresh Milk

Yoghurt

Cheese

Skimmed Milk

Analysis

Total SSSPP Quantity - Calcutta

Total SSSPP Quantity - Gujarat

ABC

VED

SDE

MIN

RO

MAX

Qty

Qty

Qty

√

√

A

V

S

17

23

29

34

43

√

√

B

V

D

89

118

147

98

120

√

B

V

D

17

24

30

9

13

√

A

V

S

1

1

1

0

0

√

B

V

S

2

3

3

0

0

√

√

√

B

V

D

24

32

40

19

20

√

B

V

S

1

2

2

2

2

√

B

V

S

1

2

2

2

2

√

√

B

V

S

2

3

3

2

3

√

A

V

S

0

0

0

1

1

√

√

√

√

A

V

D

10

11

12

4

5

√

√

√

B

V

D

9

10

11

2

2

√

B

V

D

5

6

7

6

8

√

√

√

B

V

D

36

53

69

79

102

√

B

V

D

0

0

0

4

5

√

√

√

B

V

D

10

14

18

34

36

√

B

V

D

4

5

6

14

16

√

√

√

√

B

V

D

6

8

9

38

39

√

B

V

D**42****56****69****150****192**

√

B**V****D****27****36****45****0****0****Conclusion**

In this document, I have provided the case of an Native indian FMCG organization in the perspective of inventory management in its milk products submission system. Though the organization has a central control, that is it has full details on the actual additional sales and inventory position of all the suppliers, the purchasing choices taken by it are depending on local inventory details only. It has been proven in this document through simulator that had the organization taken purchasing choices depending on echelon

<https://assignbuster.com/inventory-management-in-an-indian-fmcg-sector-finance-essay/>

inventory, it would have stored money in terms of investment in store inventory.

Future Scope of Research

The research can be further extended to other sectors of country in the similar manner like MRO Sector or Electronic sector, etc. It could also focus on a particular bigger manufacturing company as a case study in order to set benchmark for other companies. Also, this paper could also compare the performance level of the Indian FMCG industries with the Global FMCG industries in order to get a comparative analysis.