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Effectiveness of Supply Chain Management With Reference To Dairy Products in Shivamogga District - A Case Study of Shimul

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ABSTRACT

Our country has a rich tradition in dairying since the time of Lord Krishna. Dairying has been inherent and non separable in Indian culture, for centuries. Milk and milk products have always been an integral part of our consumption habits. India continued to be the largest milk and its product producing nation in 2013-14 with an anticipated milk production of 137.6 million tonnes. The country's share in world milk production stands at 18 per cent. According to pre-budget Economic survey 2013-2014,India recorded peak production of milk at 132.43 million tonnes (MT) in 2012-13, becoming the top milk producer globally, the pre-budget Economic Survey said today. This paper aims to highlight Issues and challenges of supply chain management with reference to dairy products in SHIMUL -A case study of Shimogga Cooperative Milk Producer's Union Limited. For this research, the basic distribution components for supply chain management were taken into account and the focus will be on backward and forward integration of SCM. This research paper is the consolidated of both primary and Secondary data. Primary data is collected from 50 respondents through questionnaires and Secondary data was collected through internet, journals. This study seeks to explore the factors that contribute to the effective distribution of milks and milk products and also focuses on customer service management. Details of analysis and findings are certificated in the main paper.

KEYWORDS : – Backward and forward integration of SCM, Milk Dairy.

I INTRODUCTION

Supply chain management (SCM) is a rapidly evolving area of interest to academicians and business management practitioners alike. Coordinating the external and internal activities of a firm is the basic philosophy of supply chain management. It is about managing the entire process in a collective and unified fashion. Most of the manufacturing firms are organized as networks of manufacturing and distribution facilities that procure raw materials transform them into intermediate and finished products and distribute the finished products to customers. The simplest network consists of facilities which perform procurement, manufacturing and distribution. These networks are called value added chains or supply chains. A supply chain consists of all stages involved directly or indirectly in fulfilling a customer request. The supply chain not only includes the manufacturers and suppliers but also retailers and customers themselves with in each organization.

The seasonal change in milk supply and milk composition interims of fat, casein, whey protein and lactose concentration determine the type and value of dairy products that can be manufactured by a dairy processing plant over the season. Milk composition could be manipulated on farms by: selection and breeding(conventional animal breeding or genetic manipulation); feeding; environmental or management factors such as altering calving patterns; interference in physiological pathways; and other means such as manipulation of rumen micro-organisms. At the same time, manufacturing decisions need to be made carefully considering market price and demand for each product, manufacturing capacity, and processing restrictions, amongst others. A Dairy Supply Chain management was developed and used to study how market demand for dairy products and how on-farm changes in milk composition impact on manufacturing performance of the KMF Dairy Industry. This model was intended to assist with the prioritization of research and development on milk composition changes.

Milk Dairying is often dynamic, challenging and rewarding. Dairying is the heart beat of the people which occupies an important portion for our life. Milk is now considered not only desirable but an essential intake from the moment the child is born. Milk has high nutritive value. The quality of milk consumed by the people has direct effect on their physical and mental health. Hence, it is very important that controls are affected at each stage. i e from cow to co – operative and co – operative dairy to consumers. Large emerging economies eg.. India and China have complexities and face challenges that range from development of markets to integration supplier. For firms that aspire to conduct substantial business in such markets, complexities have to be recognized and then overcome. The challenge is to understand the linkages between markets and the society. Role of Supplier Chain Management is very significant in reaching customer doors. So many milk dairy Industries are giving at most important to the supply chain management in their organizations.

II Literature Review

In this chapter, an attempt has been made to critically review the literature of the past research work, in relevance to the present study. Except a few, most of the studies were confined to the milk processing and distribution. However, the studies conducted on milk processing and other related agricultural commodities were reviewed and presented under the following heads.

Dougals M.Lambert & Martha C.cooper (2000) A study carried on "Issues in supply chain management" indicated that managing the supply chains involves supply chain network structure, Supply chain business processes and the management components. A prerequisite for successful Supply chain management is to co ordinate activities within the firm. Supply chain process integration and re engineering should be designed to increase process efficiency and effectiveness for the entire supply chain.

Dr.K.G. Karmakar & Dr.G.D.Banerjee (2006) in his article titled as "Opportunities And Challenges in the Indian Dairy Industry" ISSUE 9, 2006 Technical digest Mentioned that, Most of the dairy plants in the Government, Cooperative and Private Sector produce almost similar dairy products like varieties of milk, butter, ghee skimmed milk powder and whole milk powder. There are 7 large-scale cheese manufacturers and 14 manufacturers are producing infant foods and malted milk. There is immense scope for the broadening of the products range and some of the products, which are likely to have considerable demand in the coming decade, have been identified.

B .S Sahay, Fatinder N.D Gupta (2006) A study carried on "Managing supply chain for competitiveness – Indian Scenario" identified the framework of achieving competitiveness by alignment of supply chain strategy with business strategy. He has suggested a supply chain alignment model for realizing true supply chain efficiency and competitiveness. Indian organizations need to act fast to capitalize on these opportunities to be competitive with the world market.

Nityanand Singh & Dr. Prachee Javadekar (2011) The objective of their study is to examine the use of IT enables services, level of education and linkage of professional knowledge among the retailers

for supply chain management in order to enhance profitability, providing more value to consumer and producer by reducing wastage.

Nguyen Viet Khoi (2013) a study carried on "Wicked problems: a value chain approach from Vietnam's dairy product" This paper will map and analyze the value chain of the dairy industry in Vietnam. It will also assess the value created in each activity in order to imply solutions for a sustainable development of Vietnam's dairy industry. Value chain upgrading will not only strengthen Vietnamese local companies but also increase the competitiveness of local products against the imported ones. This improvement will offer Vietnamese people to consume more local products with a reasonable price. For the sustainable development of Vietnam dairy sector with higher added value, local enterprises should focus on and analyze the activities in the value chain to eliminate redundancies and implement missing components.

Statement of the problem: Indian dairy industry transforms the life of rural people. Dairy industries which supplies raw milk to consumers as processed milk through supply chain. As per the study of articles relating to supply chain in dairy co operative, there are few articles found relating to the production and distribution of milk which is not evaluated. Some articles have not indentified the defects in supply chain. Therefore the research has taken initiative to analysis supply chain management in dairy industry.

III Objectives of the study:
To evaluate the production and Distribution system of milk and milk related products at SHIMUL.

To examine the perception of employees about defects in supply chain process in SHIMUL.

To examine the customer service management through supply chain process.

IV Dairy Co – operative Business: A dairy cooperative is a business, which is owned and controlled by the dairy farmers who produce the milk used by the cooperative. Indian dairy is an important part of agriculture enterprise but in large extent it is subsidiary business of agriculture. Dairy development made remarkable progress with establishment dairy co-operatives. This dairy co-operative business is generally established, managed and organized by its members. Today dairy co-operative business became a model of rural development because number of dairy co-operative societies are established in rural areas and are helping economic developments of rural people. There is a process of supplying milk from dairy co operatives to consumers, which is explained below:-

4.1 Procurement of milk (Backward Integration)

1. Collection of milk.

2. Processing of milk.

3. Production of milk products.

To procure the surplus milk available in the villages through primary milk producers co operative socities of the union jurisdiction area.

Organising primary dairy co operative societies at village level.

Organising milk procurement route to procure milk.

4.2 Collection of milk from chilling centers Chilling centers are attached to dairies. The chilling centers are supplying the collected milk to the dairy for processing purposes. Portion of milk is processed and packed at SHIMUL. Advances of collecting milk from the co-operative societies:

1. To preserve the quality of raw milk supplies from dairy co-operatives.

2. To facilitate easy transportation of milk to the processing dairy.

For improving the quality of raw milk, right from milk producers level, a programme called "CMP" has been launched under which 46 Bulk Milk Coolers have been installed and 226 Automatic Milk Collection units have been provided to the societies for bringing efficiency and total transparency in the system.

4.3 Receiving of milk - Milk is delivered to the dairy in cans and tankers. The can are unloaded manually on to the chain conveyor and the milk is inspected. First, the milk will be graded and tested.

4.4 Grading - This refers to the classification of milk on the basis of quality. This is gone by organleptic tests such as smell, taste, appearance and touch.

4.5 Smelling of milk - The cover of each can is removed, inverted and raised to the nose mix; the milk is thoroughly by using the plunger and smells the milk. An experienced milk grader with a trained nose can make a decision whether to accept or reject the milk.

4.6 Appearance - By observing the milk in each can appearance test will be made. Any floating extraneous matter, off color, or partially churned milk will be noted. By these tests the milk will be graded. After this test cans with milk is allowed to reach the reception point and milk is poured in to the weighing bowl them can and lids passed on to a car washes-via. A drip saver or drum rack. The milk is discharged in to a dump tank placed immediately below the weigh bowl. Milk is pumped to a raw milk storage tank through the chiller. The milk is being received from milk chilling centre, which has already been graded, weighed, sampled and cooled. It is weighed, sampled and received.

4.7 Filtration/Classification - The milk is then pumped through a filter to storage tank.

4.8 Standardization - It refers to the adjustment of the fat and solids-not fat. The Standardisation is mostly done to have a uniform milk fat content in the finished dairy product. In india, milk is toned to 3% fat or double toned 1.5% by standardizing the fat content of milk and thus volume of milk is increased so that the milk can be supplied to the consumers at low price and to a large population.

4.9 Pasteurization - It refers to the process of heating every partial of milk , where the product is held in a specific temperature range for a long time, e.g. for milk 63 degree c for 30 minutes high temperature.

4.10 Homogenization - Homogenization is a process by which the fact globules are subject to high pressure treatment to obtain smaller globules with uniform distribution and non-separation of fat during long storage of milk.

4.11 Pricing - Price of products means amount of money for which a product can be exchanged, it is the money value of product. In SHIMUL cost based pricing is being up followed by while determining the price. In case of milk they consider all the cost of procurement, selling, expenses, transportation expenses & profit margins etc and then the selling price per liter of milk is determined. In case of milk products like called ghee, peda, etc price is determined after considering all cost included by the firm. The main pricing objectives are is to increase in sales of milk products and also to increase & maintain market share. To meet the competition & customer satisfaction is also the main objectives.

4.12 Marketing – Marketing area includes entire shivamogga, Davanagere and chitradurga districts. The union sells varients of milk i.e. Toned Milk, Homogenized cow milk, shubam standard milk and homogenized shubham milk. The other range of the products are being manufactured and marketed. The union sells all the products by Nandini milk products, a unit of K.M.F. The union is increasing its market share steadily.

V. DISTRIBUTION CHANNELS OF THE DAIRY (FORWARD INTEGRATION)

As observed in our daily life we find very consumers MU are largely spread out in different areas. Actually the supply chain management plays an important role in the distribution channels.

1. Dairy ⟹ Transport ⟹ Dealers ⟹ Retailers ⟹ Customers.
2. Dairy ⟹ Transport ⟹ Parlor ⟹ Customers.
3. Dairy ⟹ Transport ⟹ Dealers ⟹ Customers.
4. Dairy ⟹ Transport ⟹ Hotels ⟹ Customers.
5. Dairy ⟹ Customers.

6.1 Channels of distribution - There are number of distribution channels

Dealers (outsiders):
1. They will give bank securities as guarantee.

2. Security deposit in terms of cash would be put as guarantee.

3. Organization can make use of the good, local contact by authorized dealers.

4. The company will encounter less sundry debtors, as there is no problem of payment collection.

5. Less correspondence can enrich the growth of market with authorized agents.

6. Fewer sales forces are employed, since dealers are themselves skilled in setting activities.

6.2 **Under the dealers there are 3 types.** They are as follows:

a) Houses

b) Shops

c) Parlour

6.3 Research Methodology
This research paper is the consolidated of both primary and Secondary data. Primary data is collected from 50 respondents of shimogga district between age group of 18-46 and above years through questionnaires and Secondary data was collected through internet, journals.

6.4 Hypothesis The following hypotheses are framed to attain the above mentioned objectives.

H1: - Satisfaction Level of consumers of SHIMUL product is high.

H0: - Satisfaction Level of consumers of SHIMUL product is Low.

Results and analysis The data collected by administering the structured questionnaire is tabulated in this chapter. Tabulated data is analyzed through percentage and the hypothesis is tested through normal distribution at 1% significance level. Decisions are based on comparing the calculated value and table.

Satisfaction Level

Variables	Numbers of respondents	Weights	Average
Highly satisfied	3	15	0.3
Satisfied	27	108	2.16
Neutral	18	54	1.08
Dissatisfied	2	4	0.08
Highly Dissatisfied	0	0	0
= 3.62			

X		(x-)	$(x-)^2$
0.3	3.62	-3.32	11.02
2.16	3.62	-1.46	2.13
1.08	3.62	-2.54	6.45
0.08	3.62	-3.54	12.53
0	3.62	-3.62	13.10
$\Sigma(x-)^2 = 45.23$			

$$SD = \sqrt{\sum(x-\mu)^2 \div n}$$

$$\sqrt{45.23 / 50}$$

$$\sqrt{0.91}$$

SD = 0.95

Actual mean – Assumed mean

Standard Deviation

3.62 – 3

---------- = 0.65

0.95

At 1% significance level table value is 2.33. Test value is as calculated above is 0.65, which is less the 2.33. Therefore, Null hypothesis (Ho) rejected, H1 is accepted. So the satisfaction level of consumers of SHIMUL products is high.

VII. FINDINGS
Based on the study undertaken it is observed that:

From the survey, it is found that the supply is always met of Nandini milk and related products at a convenient time to the dealers.

Nandini milk and its product reach every level of customers because of its brand loyalty.

Majority of the dealers are high achievers along with high discipline and performing well.

Maintaining of brand image by continuous innovation and invention.

From the Study it is found that customer service management is satisfactory.

Majority of the employees opined that the main reason for the defects in SHIMUL milk is because of distribution problem.

VIII. SUGGESTIONS
From the study following suggestions are made.

It has been observed during the course of the study that dealers expected some more information regarding the new products. So the company should give more explanation regarding the new things.

The company should conduct a meeting for the entire employee to deliver the methods for the effective distribution.

The company should conducts survey on its products by meeting their retailers and also collecting opinions about the milk & milk products. The retailers who have lack of confidence should train. This will give encouragement in performing their and motivate them to perform better.

The company should make the retailers to know their key results very clearly.

Conclusion
This study is undertaken with an objective of evaluate the production and distribution, perception of employees about defects in supply

chain and the customer service management through supply chain process. The success of SHIMUL is fully depends upon effective Supply Chain Management. It includes dairy, transporters, dealers, retailers and finally consumers. The Supply Chain Management plays a vital role in the marketing of milk & milk products from the SHIMUL. The company having an effective network with some distribution defects which is constraint for successful marketing of the products. By adopting the effective distribution networks, SHIMUL may meet the customer needs, wants and expectation in a right time, in a right place and also in a right manner. So, we can conclude that effective Supply Chain Management is the key to the success for marketing the products.

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