

Lean Management in Modern Retail Outlet (With special reference to Food World)

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Abstract

Lean manufacturing or lean production, which is often known simply as "Lean", is the optimal way of producing goods through the removal of waste and implementing flow, as opposed to batch and queue. Lean implementation is therefore focused on getting the right things, to the right place, at the right time, in the right quantity to achieve perfect workflow while minimizing waste and being flexible and able to change. This research aims at critically appraising the waste management techniques through Lean Management Concepts in the Retailing Industry. For the same, a study of the efficient consumer response (ECR) was done. ECR is an initiative launched in the USA to help bring together grocery distributors and their suppliers for the benefit of the end consumer. The ultimate goal of ECR is a responsive, consumer-driven system in which distributors and suppliers work together as business allies to maximize consumer satisfaction and minimize cost. Accurate information and high-quality products flow through a paperless system between manufacturing line and checkout counter with minimum degradation or interruption both within and between trading partners.

The key challenges for the retail industry which were found in the study are: large geographic area; infrastructure constraints; distribution constraints; fragmented market; lack of national distribution networks; lack of distribution hubs; Operations – at a nascent stage of evolution; supply chain in India has weak links; Supplier integration – predominantly manual; Supplier maturity – low in India; Sourcing – largely tactical today; Fragmentation of supply chain due to tax laws; Technology adoption and usage – fairly low by international standards. It was found that the significance of private labels is increasing, Loss prevention needs to embed into all processes, financing is not a big constraint for Indian players, Internal challenges need to be overcome, use of technology is at a nascent stage in Indian retailers.

Keywords: Lean Management, Flow Management, ECR, Loss prevention

Lean- Introduction

Lean methodology is the elimination of muda, or waste, which is defined as “any human activity which absorbs resources but creates no value. This customer-centric philosophy has enabled companies to increase productivity, strengthen competitive advantages and reduce cost. Lean is a process improvement methodology widely used in industry that focuses on identifying and eliminating wastes to improve productivity and reduce costs.

We rely on fresh food to live. Its quality and freshness have a direct effect on our health and diet. Food retailers compete strongly in the area of fresh food as well as myriad of other products. Consumers want to see the best products on display at appropriate prices so they can identify value in the retail food offer. For retailers making sure that the shelves are stocked is a fundamental component of modern retailing. This fact has increasingly compelled retailers to think about how they structure, control and amend supply chains to ensure they are effective and efficient. With changes in production, Logistics, retailing and consumer tastes, combined with increasingly technological capabilities and global sourcing reach, this task has become ever more complex. More and more difficult choices have to be made. How can organizations involved in supply chain make sense of the sometimes-conflicting tensions and pressures? What are the „right decisions and appropriate solutions? Substantial Changes has also been aided by a realization that supply chains, particularly in fresh food, can be simplified and reorganized to become more efficient and effective. In particular the scope for improvements in packaging logistics to produce better solutions for timely and appropriate handling and supply has been considerable. The packaging, handling and movement of products has become of vital concern for retailers and suppliers,

including producers, manufacturers, logistics services providers and of course handling system suppliers. These concerns and the implications of the solutions are felt from the point of production through the supply chain to the point of purchase and even consumption.

Objectives

1. To crystallize the relevance, philosophy and structure of Lean pertinent to the players in the Retailing (esp. Food) business
2. To identify the specific tools, techniques and components of Lean are most appropriate for players in the Retailing (esp. Food) business
3. To assess of the level of improved productivity and quality that can be expected through the introduction of Lean
4. To give recommendations and suggestions about how to establish and implement Lean across the chosen industry

By meeting the aim and objectives, it is then possible to answer the following questions:

1. Can Lean work in the chosen sector?
2. How shall Lean work?
3. Can Lean be replicated?
4. Can Lean embed a culture of continuous improvement?

This research explores both the opportunities available for businesses today, and the current obstacles encountered when implementing Lean methods for activities that have environmental aspects.

Therefore, the Kaizen approach uses rapid improvement events to make small, quickly introduced changes. This approach was cited by line managers as favorable as it provided a faster return for effort was more visible and did not challenge existing management control styles to the same extent as full adoption. It was also favored by the staff as they felt engaged in an improvement process that quickly demonstrated potential results where they had some input.

Therefore, the overall objective of the research is to critically appraise the waste management techniques through Lean Management Concepts in the Retailing Industry.

Literature Review

RACHEL MASON-JONES, BEN NAYLOR AND DENIS R. TOWILL of **LOGISTICS SYSTEMS DYNAMICS GROUP, CARDIFF UNIVERSITY, WALES, UK**, in their literature i.e. **ENGINEERING THE LEAGILE SUPPLY CHAIN**, noted the importance of new internal supply chains being properly interfaced with the marketplace. It suggests that the appropriate way forward is to design and implement a "leagile supply chain". Whereas leanness may be achieved by eliminating non-value added time, agility usually requires the additional reduction of value-added time via production technology breakthroughs. Demonstrates how the "lean" and "agile" paradigms may be integrated, which requires evaluation of the total performance metric and development of a route map for integrating lean production and agile supply in the total chain. It presents results achieved in a re-engineered real world supply chain serving the electronic products market.

ROBERT LOWSON (DIRECTOR – STRATEGIC OPERATIONS MANAGEMENT CENTRE, UNIVERSITY OF EAST ANGLIA NORWICH, UK), in his paper, **THE IMPLEMENTATION OF OPERATIONS STRATEGIES IN FAST-MOVING SUPPLY SYSTEMS**, provides an empirical contribution to the debate concerning the implementation and impact of operations strategies. Their nature is described, as is the necessity for the adoption. Details of the possible composition of such strategies is suggested and consideration given to how they attain strategic status. The work also offers some quantitative evidence as to the possible impact of these strategies and their contribution to competitive advantage.

ANDREW FEARNE AND NICHOLAS FOWLER'S research paper - **EFFICIENCY VERSUS EFFECTIVENESS IN CONSTRUCTION SUPPLY CHAINS: THE DANGERS OF –LEAN THINKING IN ISOLATION**, Where the purpose was to illustrate the potential danger of applying “lean thinking” discretely and indiscriminately in a project environment with high levels of complexity and uncertainty. Insights are presented from two case studies of private residential construction projects which the authors believe are indicative of recent efforts to reduce the cost of construction activities. Evidence was found of attempts to remove capacity in transportation, stockholding and on-site labour. Some of these attempts were logical and resulted in cost-savings but others were illogical and resulted in reduced levels of responsiveness and flexibility to respond to the uncertainty, which is a characteristic of most construction projects. The retail industry sector has undergone some changes over the past few years; 1. Better communication between retailers and suppliers has been taking place. 2. More exchanges in information and know how and perhaps a slightly more transparent commitment to building a win/win approach to competitiveness. The latest crusade that the retail industry has embarked on is **Efficient Consumer Response (ECR)**.

EFFICIENT CONSUMER RESPONSE (ECR) OR QUICK RESPONSE ECR is an initiative launched in the USA to help bring together grocery distributors and their suppliers for the benefit of the end consumer. In view of the cutthroat competition in this industry, there was an overall realization that there has to be a total focus on the complete chain of value delivery to the end customer so that unnecessary costs can be squeezed out and value and effectiveness optimized. **The ultimate goal of ECR is a responsive, consumer-driven system in which distributors and suppliers work together as business allies to maximize consumer satisfaction and minimize cost. Accurate information and high-quality products flow through a paperless system between manufacturing line and check-out counter with minimum degradation or interruption both within and between trading partners.** The ECR strategy is clearly described in the following five guiding principles:

- (1) **focus on providing better value** to the grocery consumer: better product, better quality, better assortment, better in-stock service, better convenience with less cost throughout the total chain;
- (2) **Committed business leaders determined to achieve** the choice to profit from the replacement of the old paradigms of win/lose trading relationships with **win/win mutually profitable business alliances**;
- (3) **Accurate and timely information** must be used to support effective marketing, production and logistic decisions. This information will flow externally between partners **through EDI using UCS (uniform communication standard) standards** and will internally affect the most productive and efficient use of information in a computer-based system;
- (4) **ensure the right product is available at the right time**;
- (5) A **common and consistent performance measurement and reward system**

Methodology

A secondary research is done using internet and through personal interview of experts to determine the variables considered while implementing lean management. A primary research has been conducted in various Retail Outlets in Hyderabad region, with both retailers and customers and gaining employee insights.

Food World: India's First Retail Chain

A pioneer in the business of Organized Retail in India, **Food world**, the Rs.300 crore company part of RPG Group, is the first national chain of supermarkets. It provides customers with a wide range of quality products at a reasonable price all under one roof, in a convenient location, in a clean, bright and functional ambience. Part of self-service format Food world follows the service of clearly marking on the shelf, relevant details of the product displayed, including the name, gram-age and price. The company has grown rapidly from being a one-store one-city operation in 1996 to an 89-store operation today, thus becoming India's largest and fastest growing supermarket chain. Food world's share of the organized retail market in the cities in which it operates is 62%, clearly a dominant share. In the last 5 years, the CAGR, in terms of turnover has been at 30%.

Food world now owns more than **80 stores** and spans across 12 metro cities in Southern and Western India – mainly Chennai, Bangalore, Hyderabad and Pune. In its current phase of growth, Food world handles on an average 600 number of customers per day per store, which translates to **1.8 million transactions per month**.

Inventory Management at Food World

Inventory is the stock of any item or resource used in an organization. An inventory system is the set of policies and controls that monitor levels of inventory and determine what levels should be maintained, when stock should be replenished, and how large order should be. The warehouse has an area of 35,000 square feet and employees a workforce of 70. The workforce is divided into types:

- (a) Permanent Employee- 22 Permanent Employee works at the warehouse.
- (b) Outsourced Workers- 58 Outsourced or contract works are employed.

Food world does not follow any specific kind of inventory management models like JIT, Economic Order Classification or ABC Analysis as such. Food world has divided the complete lot of goods into three categories:

- 1. Staples** - These items consist of cooking items.
- 2. Non Foods** - The Fast Moving Consumer Goods (FMCG) are categorized under this category.
- 3. Processed Foods**

Modus Opearandi

Basis of Inventory Management at Food world is the daily circulation of sales figure of all the stores in Hyderabad to the central warehouse, which can be categorized as **PERIODIC INVENTORY**. At the end of the working hours at any store, the sales figure of each and every item is assessed by the store manager. Then he sends the indent to the warehouse. Next day when the working hour at the warehouse starts the warehouse manager assesses the indents put by various store managers and dispatches the required amount of goods to them. Every day the physical stock is matched with system stock for checking any discrepancy.

Entire inventory is divided into two types of items:

- 1. Flow through goods
- 2. Put Away goods

Innovation at Food World

Reverse Auction

One of the most fundamental practices in retail is to look for products that can be consolidated to offer better prices and consistent quality to the customer, while simultaneously allowing the retailer to reduce transactions costs and overheads. Food World has been consolidating its requirements for some time, and a tool such as 'reverse auction' offered tremendous potential.

So the first objective was to carry out a reverse auction of a product that had a very good chance of success while addressing the core business objectives and building some organizational learning on the subject. The company also ended up making significant savings in the process. This first reverse auction was to also serve as a warm-up event and role model for the more challenging ones involving other products such as staples.

Finding the Partner and Creating the Team

Sifywebex offered this efficiency and professionalism, and had the first auction for carry bags up and running in 20 days. Food World has also collaborated with Sifywebex to carry out similar auctions for rice. Reverse auctions for other products such as sugar, freight and stationery are also being discussed.

Deciding the Products and Particular Benefits

The choice of carry bags as the item to be auctioned was critical for several reasons. Carry bags as a commodity are crucial to Food World's operations. Sourcing of carry bags had traditionally been a localized affair with variations in prices, commercial terms and quality as well as duplication of negotiation and the purchasing process across the regions. Finally, Food World consumes about 15 tonnes (or approximately 150 million bags in three sizes) of it every month - enough volume to attract any manufacturer apart from the brand equity that Food World enjoys. The objectives they decided upon were - to centrally manage and maintain supplier relationships, improve supply quality and availability/inventory, reduce administrative costs and executive time and reduce the number of suppliers for each category of products.

Supplier selection criteria

Only suppliers who had the wherewithal to meet Food World's volume, delivery and quality schedules were pre-selected with the help of an independent evaluation by a plastics industry consultant Food World hired. These included both existing suppliers and some new ones who had a good market reputation and whom the consultant ratified after personal visits to their premises. Food World wanted to make sure that the shortlisted participants were serious and so required them to make a security deposit. This decision was discussed in depth as it was felt that a deposit could prove a dampener to participation. But on the positive side, it would help separate the serious suppliers from the others.

Streamline and Standardise

Food World's carry bags purchasing, traditionally a decentralised job with huge variations in prices across regions, will now be a standard and centrally controlled process. **So now the corporate office puts the policies in place and coordinates the auction, while the regional offices place the actual orders based on the outcome of the auction and also do the quality checks.**

Kaizen in Operations at Warehouse Needed

Almost all the operations at the Food world warehouse is being done manually using trolleys for moving heavy goods. After talking to the executives over there, they told that they are going to automate whole material handling activities within upcoming months. However, they divulged to give any specific deadline. "Through automation of the present working system, they can cut the workforce requirement to a great extent. This will have an impact on cost cutting and thereby increasing productivity." **About IT implementation commented one executive of Food world: there is awareness and need among the retail world to implement modern inventory management techniques like JIT. Leading Indian FMCG manufacturers and retailers use of GDS Services (Global Data Synchronization) — a common standards-compliant 'information data pool' to benefit the Indian consumer.**

Layout of Warehouse and Retail Outlet

The layout of the warehouse to facilitate proper operation of the working staffs and easy movement of goods is represented through the line diagram on the next page. The two types of inventories are kept at two separate places and are not mixed with each other. Those goods that are to be dispatched immediately are kept in the front rows and near to the dispatch outlet. This arrangement avoids any extra time requirement for goods movement within the warehouse.

Waiting Line Analysis at Retail Store

The waiting line dynamics followed at the Food world retail outlets is of the **single channel and single-phase** characteristics. The queue follows a FIFO (first in and first out) discipline. I did a study of the waiting line dynamics at the payment counter of the Food world Mehndipatnam. The customer arrival rate and the service rate were studied for about an hour to reach at the average arrival rate (λ) and the average service rate (μ). Various parameters like the time spent in the line and the number of persons in the system and in the queue were determined. These values were matched with the actual/observed values.

λ (Observed)= 2.5 minutes= 150 seconds.
 μ (Observed)= 3 minutes= 120 seconds.

Based on these values we calculated the following:

Average number in system $L = \lambda / (\mu - \lambda) = 5$
 Average number in queue $Lq = \lambda^2 / \mu(\mu - \lambda) = 4.17 = 4$ (approx.)
 Average time in system $W = 1 / (\mu - \lambda) = 2$ minutes
 Average time in queue $Wq = \lambda / \mu(\mu - \lambda) = 1.67$ minutes
 Utilization factor $= \lambda / \mu = 83.33\%$
 Percent Idle = $P0 = 1 - \lambda / \mu = 16.66\%$

PARAMETERS	THEORITICAL VALUES	OBSERVED VALUES
L	5	5
Lq	4.17	4
W	2 minutes	2 minutes & 10 secs.
Wq	1.67 minutes	1.7 minutes

Therefore, we find here that most of the values calculated through the theoretical formulae are being verified by the observed values.

Findings and Conclusion

After studying the inventory management system and layout of the Food world, we conclude that they are following a good inventory process like Flow Through and Put Away system. However, as per the growing competition in the retail sector Food world needs to upgrade their system through proper automation and proper IT implementation, to increase the productivity levels. Just in Time management is the need of the hour for this fastest growing retail chain store to cut down inventory levels. Proper implementation of the modern inventory management system and IT implementation will surely take Food world a long way and in line with Walmart and Kmart.

References

1. www.wikipedia.org
2. www.lean.org
3. www.emeraldinsight.com
4. <http://www.indiaretailshow.com/Industry.htm>
5. <http://www.iimcal.ac.in/community/consclub/ppts/retail.ppt>
6. HSBC's 'Jumbo retailing - Organized retailing in India gets hyper'
7. Operations Management for competitive advantage, by- Chase, Jacobs, Aquilano and Agarwal, published by-The McGraw-Hill Publishing Company
8. Retailing Logistics & Fresh Food Packaging, by- Gustafsson, Jonson, Smith & Sparks, Published by The Chartered Institute of Logistics and Transport (UK)
9. Management and Staff of Food World (non-disclosure of identity and quantitative data)