

Role of Supply Chain Management in Industries - A Case Study

Shakti, Deepak Dhouchak

M. Tech, Mechanical Engineering Department, UIET, MDU Rohtak, Haryana, India

ABSTRACT

This report analyzes some important characteristics of the supply chain management. SCM is used for in many areas of the industry covering production planning and scheduling, output, and distribution planning under uncertainty, multi-object supply chain optimization and water resources management in the water supply chain planning. To resolve the troubles related to these models, and solution tactics are developed using mathematical programming, particularly mixed-integer linear programming (MILP), techniques. Foremost, the medium-term planning of nonstop multiproduct plants with structure dependent exchanges is addressed in SCM. An MILP prototypical is developed using travelling salesman problem (TSP) usual formulations. A systematic skyline methodology is also suggested for large cases. The Delphi process is used in many functional strategies and used as a tool to conduct studies like planning views for different programs, determination of policies, resource planning to extract complete replacements, for explaining assumptions proposed and to conclude results of any study within a well spread possibilities. Compared with several literature models, the future prototypes and approaches show significant computational advantage. Then, a short-term arrangement of batch multiproduct plants is viewed. All the raw material or sub- parts required to manufacture or assemble many parts in to the different companies. In this study we will try to find out the possible causes of TAT increment and try to reduce them, so that supplier satisfaction can be achieved as well as supply chain management of the company can be improved.

Keywords : Supply Chain Management, Quality Control, SCM, QC, Time Reduction, Material handling, Reduce wastage.

I. INTRODUCTION

Current supply or process chain management (SCM) explains any written strategy of computational merit, also increasing the industrial profit from different industrial fighting way at a time. In This paper, we identify the process supply chain, its applicant and the planning problems increasing along with the string. We split the planning problems into strategic, planned and operative in a supply chain background and define the role and make an application. Now let's talk about the need for information and bring decision support to planner in all these countries. Research value give five developing dimension of process chain exercise as,

1. Study about relationship of different enterprises
2. The value of technical sharing
3. Gives quality information
4. Examination between process chain and exercise

5. Play a vital advantage into the computational and industrial performance.

The data is collected and generated for evaluation from around 200 organisations, the correlation among the fabric was evaluated with the help of structural equation modeling. Final show of upper stages of process exercise do contribute for an improved computational merit and increase industrial profits graph. According to this type of techniques produce direct implement on the industry profit and give the positive situation (Kaushik, P., & Mittal, K. 2015).

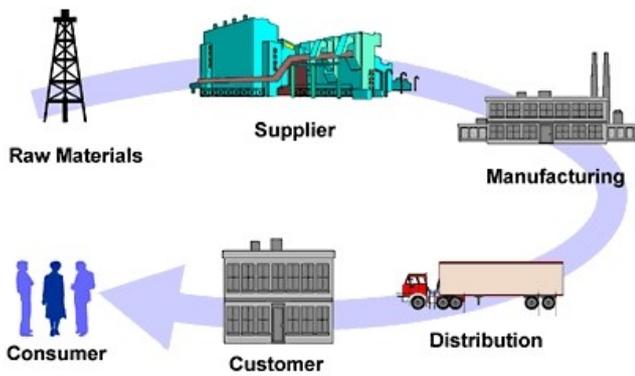


Figure 1: Supply Chain Management

In the above current situation give vital merit and producing the research attention of process chain technique, different companies are throwing down the gauntlet with finding ways to gather ever-rising customer outlooks a manageable price. To do so businesses must search out which pieces of their supply-chain process are non-competitive, know which customer needs are not begin improvement goals, and rapidly implement necessary improvements (Kaushik, P., & Mittal, K. 2015). Due to competitive environment in the markets during 1990s, the markets became world wide and more firm. This lead to a need of processing goods and services to intended people within specified time interval following least possible expense. Industry make that it was not gave adequate for improving the efficiency with an arrangement at different way, but overall process chain create commotional situation. The intellect and working of process chain become an indispensable prerequisite for remaining competitive in the planetary race and for improving profitably of process chain implement (Deepak Dhouchak, 2017). Current generation of the market has known and accepted the value of SCM intodays competitive world and have adopted it in their working places. The process chain accepted from different areas in different physical bodies of literature, such as buying and supply management, operations management, logistics and transportation, merchandising, organizational theory, and management information systems.

Many studies have been conducted that help to understand the characteristic and key points of SCM, like industrial entities with cost analysing on transactions, theories based on resource focused and resource independent organisation, reasonable techniques and social-political issues.

Grandness

Industry finds that they give exact effective process chain wide working area to contend in the worldwide at same stage into the industry. The writer announce very effective management paradigms, this result about relationship shifted beyond traditional enterprise limitations and tries to organize complete business processes throughout important range of multiple societies by Peter dracker. Supply or process chain is too important for organizational learning more about the industry techniques. In world geographical lots of general process chain attached inversely trading group incline to go lots modern techniques and productive.Process Chain give heavily information into industry from the operations area management, achievement, logistical, and whole detail about used technology, and hard work for an approach. The security area of the industry for process chain is defined in ISO 28000 and 28001 and associated standards published together with the ISO and the IEC.

Objective of Supply Chain Management

The objective generated when the industrial process chain used as information. The value SCM generates is the conflict compares the final product give the important result to the user. Working effort to the process chain is also used as consumer's request. The commercial process chain value will give the strongly correlate process chain different heading are preferred like as:-profitability, the dispute and the revenue create from the user and overall the process chain.

Every flow of techniques product create the cost of the provision criteria achieved. From different techniques can gain better result for giving higher success rate (Mittal, K., Kaushik, P., & Khanduja, D. 2012). (SCM) process is also effect on the flow of supply product from one point to another point and also can define main information related to problems.

Some objective of SCM are as follows:

- To shorten the time taken to transport product at customer's location within reasonable price and conditions.
- To define (SCR) supply chain responsibility.
- It is applied to cut the physical supply chain link.

- Efficiency & Cost Effectiveness across the whole Chain SCM objective is maximizing the overall assessment generated.
- Supply chain maintained balance between the income generated and the price of provision chain.

Research Methodology

In this case study we use Delphi Technique, Quality circle, To reduce Turn Around Time (TAT), brainstorming etc.

The Delphi Technique: The Delphi system is a generally utilized and acknowledged strategy for social event information from respondents inside their area of ability. The method is outlined as a gathering correspondence process which plans to accomplish a joining of conclusion on a particular genuine problem.

Table- Delphi Test Result Significance

Factor	Results
Size of group	Average error of the group responses substantially declines with the size of the group. One half of the individual error was observed with groups of 7 members. An additional 10 members reduced the average group error by an additional 10%.
Iteration with feedback	Substantial reduction in the dispersion of individual responses (convergence) with iteration.
Individual and group self ratings	Some exercises required individuals to rate their confidence in their answer to each question on a scale of 1-5 where 5 meant 'I know the answer' and 1 meant 'I'm just guessing'. A group self-rating could then be computed for each question by taking the average of the individual ratings

This procedure is utilized as a part of different fields of concentrate, for example, process arranging, requirement evaluation, strategy assurance, and asset use to build up a full scope of choices, investigate or uncover basic presumptions, and relate judgments on a theme spreading over an extensive variety of orders (Mittal, K., Kaushik, P., & Khanduja, D. 2012). This system is appropriate technique for agreement working by utilizing a progression of polls conveyed utilizing various emphases to gather information from a board of chose subjects. Subject choice, time periods for directing and finishing an examination, the likelihood of low reaction rates, and unexpectedly managing criticism from the respondent gathering are ranges which ought to be considered when planning and executing a Delphi think about.

Brainstorming: It enables a gathering to make whatever number thoughts as could be expected under the circumstances in as short a period as would be prudent. Ordinarily, it should just take around 5-10 minutes to produce 25 or 30 thoughts. This quick pace helps imaginative considering. Thoughts are composed down on a flip graph. Exchange and feedback are not permitted. Conceptualizing is a gathering or individual inventiveness procedure by which endeavors are made to discover a decision for a particular issue by social occasion a rundown of thoughts suddenly contributed by its people (Sharma, C., & Kadyan, S. 2016a).

Focus on quantity: This control is a methods for improving disparate generation, intending to encourage critical thinking through the adage amount breeds quality. The supposition says the more noteworthy the quantity of thoughts created, the more prominent the shot of delivering a radical and compelling arrangement (Deepak Dhouchak & Naveen Khatak, 2017).

Withhold criticism: In brainstorming, feedback of thoughts produced ought to be put on pause. Rather, members should concentrate on stretching out or adding to thoughts, saving feedback for a later basic stage of the procedure. By suspending judgment, members will don't hesitate to create strange thoughts.

Turn Around Time: In this techniques, we solve the turn around time overall. When some problem identifies then overall time consumption reduces by different techniques.

Problem Identification

- Problems detecting techniques.
- Shortage of required parts for vehicles.
- High waiting time for vehicles.

Theme: To reduce the Turn Around Time.

Target fixing: Control TAT and reduce time approximate 3-4 days.

Finding the possible Causes:

- Customer's satisfaction.
- Material Handling Equipment.
- High Inspection time.
- Manpower.
- Waiting time for vehicle.

Observations

Brief Description of the Problem: TAT from 5 to 6 days. Now our Aim is to reduce TAT time up to 2 to 3 days.

Stratify Data

In order to stratify data we experience to be familiar first with basic quality circle. Quality professionals have many names for this basic tool of quality.

1. Make and force diagram (Ishikawa chart): Distinguishes numerous conceivable reasons for an impact or issue and short thoughts into helpful classifications.
2. Check sheet:-Analysed structural result from gathered data.
3. Control chart:- Charts that help to evaluate how the procedure changes with time.

When the order conformed then the supplier take a receipt of required object and loading the different object on trucks or transports vehicles. In this process they take 1 to 2 days for loading and inspection of all parts were loaded. After this transportation way take 2-3 day. When trucks reach at the service center then they were unloaded and all the parts or objects stored into the store and take purchase list and inspection. The whole process take 5-6 days, this is so high and customers satisfaction also not very well.

Advantages

- Reduce TAT
- Remove material handling
- Uses at all level of company
- Define accurate details of product/parts
- Reduce idle time
- Customers satisfaction also increase

II. REFERENCES

- [1]. Mittal, K., Kaushik, P., & Khanduja, D. (2012). Evidence of APQP in quality improvement : An SME case study. *International Journal of Management Science and Engineering Management*, <http://doi.org/10.1080/17509653.2012.10671203>.
- [2]. Kaushik, P., & Mittal, K. (2015). A General Model for Problem Solving in Manufacturing or Service Organizations. *Journal of Engineering and Technology*, 0(0), 0. <http://doi.org/10.4103/0976-8580.158566>
- [3]. Deepak Dhouchak & Naveen Khatak. (2017). 6S Methodology and Its Applications, *International Journal of Research in Mechanical Engineering*, Vol. 4, Issue 02, ISSN: 2349-3860.
- [4]. Sharma, C., & Kadyan, S. (2016a). Examine Total Quality Management in Engineering College Libraries : An Evaluative Study. *Pearl-I Journal of Library and Information Science*, 10(4), 215–223.
- [5]. Sharma, C., & Kadyan, S. (2016b). Road Plan to Enterprise TQM from Manufacturing to Library Services. *International Journal of Information Dissemination and Technology*, 6(3), 165–169.
- [6]. Deepak Dhouchak, Review of 6S Methodology, *International Journal of Development Research*, Vol.07, Issue 08, pp.14455-14457, August, 2017.