



Reducing the Expenditure through Machinery System Evolving the Concept of RE in SCM

A.K. Dubey, Vipul Sharma, Prakriti Trivedi

Faculty Department of CSE, Govt. Engineering College Ajmer, Rajasthan
Rajasthan Technical University,
Kota, India

Abstract: Generally an organization using the labor system to carry the material from different points and it takes more expenditure. Our analytical study finds out that using the machinery system we can reduce the amount of expenditure. We propose a new definition of supply chain management on the basis of statically analysis in this paper; we focus the latest technology of machinery system. Through these systems we can reduce upcoming expenditure to carry the material from different stages. We also propose a new process of SCM to manage the chain system of material. As we know that everything has positive and negative attitudes so our proposal also satisfy these statements and finally we gave the analytical study of research on supply chain management.

Keywords— SCM, Labour, Machinery System, Expenditure, and Re

I. INTRODUCTION

Now-a-days technology is entered in everywhere and people depend on it. But few systems are carried out by humans. If all of these are systems handled by the technology then we need a highly resolute AI system (like robot, expert system and other automatic machines). In a production industry the SCM manager handles all cases from raw material upto making new products. They searched the better ideas to reduce the expenditure in this process. In older days, the carrying cost from place of raw material plant to production industry was so high because of low inventory in technology. Now this problem can be reduced by automated systems and vehicles. There are so many small areas where we invest 10% amount of project to develop it within a plant. We observed that a single part carrying the intermediate product from different stores is also valuable.

In today's global market, managing the entire supply chain becomes a key factor for the successful business. World-class organizations now realized that non-integrated manufacturing processes, non-integrated distribution processes and poor relationships with suppliers and customers are inadequate for their success. They realized the impact of an organization's plan on the other areas of the supply chain. The impact of an organization's plan on the whole supply chain is unpredictable before its execution [1]. Supply chain management has started to play an important role in the value chains of both industrial and service sectors. Recent data's show that company spends around 20% of the product costs in managing supply chain [5].

II. LITERATURE SURVEY

A survey is done over 300 companies with data Collected between December 2007 and February 2008. While the survey reveals numerous strategies used by companies to manage their supply chains on a global basis, we have identified ten major trends that are driving innovative supply chain design and configuration across all industries:

Globalization is accelerating, leading to large structural shifts for global supply chain organizations and new challenges to manage supply chain performance successfully. While past globalization initiatives focused on manufacturing and assembly, future globalization will also target the product and technology development [3]. Employees are forcedly pressurized by the manager to reduce the cost and improve the quality within the budget. Western industries focus on offscouring destination but Indian organization thinks about their globalization. A product is showing its valuable quality if there is any fault related to quality then the market value of that product becomes so poor that can't even earn its initial amount. Therefore an organization fixed the quality as in mid for every product. Flexibility of a product put it for higher globalize market otherwise they are suffering from a lot of problem. Survey results indicate that roughly 70 percent of the respondents indicate that they make sure to use the industry standards when developing new products. More than 26 percent indicate that their supply chain partners agreed on standards to be used in products [4]. PRTM management shows the survey report of 2010 that the need for greater supply chain flexibility will overtake the product quality and customer services as the major drivers for improving the supply chain strategy. Different strategies and policies are used to improve global flexibility.

III. DIFFERENT CASES ON SCM

During the analytical study, we found out different stages missing the nearest possible methods and techniques to reduce the expenditure of project development. We will consider those cases one by one to highlight the important points for reducing that. Case I: A single labour carried out materials from two different stores need nearly 100 rs for it. Similarly, 50 labour carried out it need 5000(50*100=5000) amount per day. For 30 days this amount becomes 150000 (5000*30=150000). It shows that production industry invested 150000 rs. to carry the material within

the plant. By using latest machinery system an industry can reduce these labour cost at an initial level. Case II: The meeting cost for plan is also a valuable thing for a project. Due to the lower expertise managers, an industry has to face a lot of problems (don't have experience for better plan to choose a better method for developing the projects) and has to invest maximum amount also. Case III: Testing the products need 30% amount of the project and it is handled by a specialist tester. I think, if we introduce here some of the automatic tester of machinery system as secondary level, then we can reduce the expenditure and can get better products. But we can't cancel the human testing stages as alpha testing, beta testing etc.,. Another case but not the last, Agility, responsiveness, and efficiency can be elusive in the factory to deal chains for our automotive, agricultural, construction, or project cargo. Limited capacity, long lead times, and high supplier costs confront us in each link of the chain [2]. The Concept of Re is mostly used by the production industry to reduce the amount of designing the product. It covers redesign, recycle, reproduction and re concept. For example recycling of a bottle reduces the amount in compare to developing a new bottle.

IV. IMPORTANT ATTRIBUTES

Different operational models searched by stakeholders are depending accordingly perspective of customers. The expectations of customer change regarding to the project delivery, time, amount and quality of project to make a situational case for the construction industry. These four situational cases create a risk for stakeholders. They choose a new operational model for avoiding such type of risks. A survey report highlighted six major attributes of the Lean supply chain given as in Demand Management, Cost and Wasting Reduction Process Standardization, Industry Standardization, Cultural Change, and Cross enterprise Collaboration. In the demand management, they pull products and services when requested by the customer [4].

Some of the important methods to reduce the water consumption are given below: [7].

- (A) Repairing or replacing leaky water faucets,
- (B) Turning off water faucets and hoses when not in use
- (C) Installing low-volume toilets, installing low-flow faucets
- (D) Serving water to guest who requests it rather than as a standard service.

The process of recycling the product such as bottle can reduce the amount in compare to developing a new bottle. Digital waste defined information that is not related to supporting defined goals and metrics. If data cannot be tied to specific objectives then it can decide that how to make new processes, it is worthless to the organization. Worse, digital waste can cloud and congest decision making unnecessarily [4].

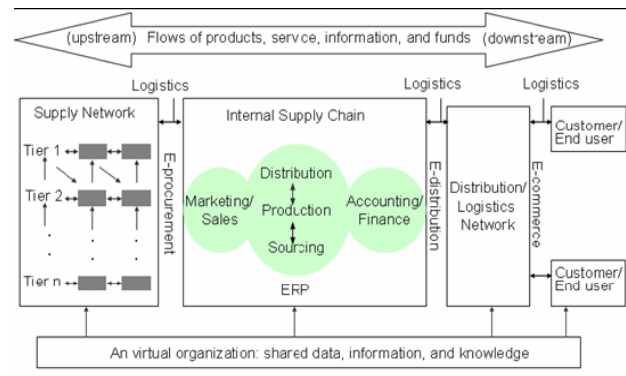


Figure 1: Supply chain in e-business environment [6]

Table 1: Responsibility of work for different terms

S.No.	Terms	Responsibility
1.	Sourcing or purchasing of the company	<ul style="list-style-type: none"> a) Selecting suppliers b) Negotiating contracts c) Formulating d) Purchasing process e) Processing order
2.	Production	<ul style="list-style-type: none"> a) Transforming raw materials b) Parts or components to a product
3.	Distribution	<ul style="list-style-type: none"> a) Managing the flow of material b) Finished goods inventory from the manufacturer to customer
4.	ERP (Enterprise Resource Planning systems)	<ul style="list-style-type: none"> a) information system b) Process Store data c) Cut across functional areas d) Business units e) Product lines to assist managers make business decisions.
5.	Supplier network	<ul style="list-style-type: none"> a) Provide materials or services b) Either directly or indirectly.
6.	Distribution network	<ul style="list-style-type: none"> a) Actual movement of materials between locations
7.	Distribution management	<ul style="list-style-type: none"> a) Management of packaging b) Storing c) Handling of materials at receiving docks d) Warehouses e) Retail outlets

The supply chain e-business environment shows that the work load is divided in few sub tasks and the responsibility of each task is to perform their allotted load in a good manner. By using World Scientific books, we can categorize this responsibility in different phases for the project development in a tabulated form so that it can be easily understandable.

Now we propose the following procedure for the supply chain management as given below. These start from initial stage to understand SCM process to reach at final stage of policies and strategies:

A. Algorithm

Step I: The managing team members understand about the supply chain management and it's processing.

Step II: In second stage, they tightly concern about the previous scenario of the supply chain management.

Step III: After complete knowledge of SCM prospective, they categorize the upcoming problem.

(A) If problem is related to the quality of product, then it checks its performance and classifies the problem into sub problems.

(I) they select the better design methods for such problems.

(II) After selection of designing methods team members discuss on the optimal solution.

(B) If there is a problem of exceeding the cost of product, then team members collect all the relevant data's of every stage to the develop a product.

(I) an auditor audits all the phases of production and report to the SCM manager.

(II) Manager compares it and analyses this work with machinery systems.

Step IV: After successful processes of stage III inspection team measure its current performance.

If,
 Performance = Satisfactory Evaluate SCM strategies and policies
 else

goto Step III. End:

Step V: At last manager terminates the processing.

B. Flow Chart

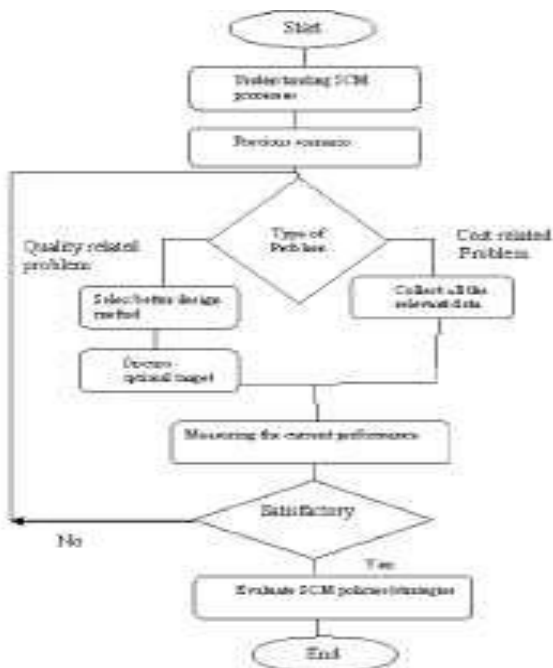


Figure 2: Flow chart of proposal SCM process

V. CONCLUSION

The objective of supply chain management is to satisfy the customer requirements and fulfil their demands for guaranteed delivery of high quality and low cost with minimal lead-time. To achieve this objective, companies need to have better visibility into the entire supply chain of their own plans as well as those of their suppliers and customers. Companies today should be agile enough to

adjust and rebuild plans in real time, to take care of unexpected events in the supply chain [1]. By using the Concept of Re, we can reduce the expecting cost of product development. These concept cover recycle, redesign, remanufacture and reproduction of materials. The machinery system is also beneficial to reduce the labour cost and save the time to complete the production.

ACKNOWLEDGMENT

The authors are thankful to everyone who supported or motivated us.

REFERENCES

- [1] Yoon Chang and Harris Makatsoris, "Supply chain modeling using Simulation", I. J. of simulation vol. 2 no. 1, ISSN 1473-804x online, 1473-8031 print.
- [2] "Supply chain management" Wallenius Wilhelmsen Logistics, www.2wglobal.com.
- [3] Driving Global Supply Chain Flexibility through Innovation, Sixth Annual Survey by PRTM Management Consultants. Global Supply Chain Trends 2008-10.
- [4] Understanding the Lean Supply Chain: Beginning the Journey, 2005 Report on Lean Practices in the Supply Chain.
- [5] A fuzzy multi-criteria decision making approach for supplier selection in supply chain management, Sreekumar and S. S. Mahapatra, African Journal of Business Management Vol.3 (4), pp. 168-177, April, 2009, ISSN 1993-8233 © 2008 Academic Journals.
- [6] Supply Chain Management: Concepts, Techniques and Practices - Enhancing Value through Collaboration © World Scientific Publishing Co. Pte. Ltd. <http://www.worldscibooks.com/business/6273.html>.
- [7] Fact Sheet "Restaurant Pollution Prevention and Waste Reduction", by John Engler and Russell J. Harding.

BIBLIOGRAPHY OF AUTHORS

Ms. Prakriti Trivedi (Asst. Professor.) received his BE (Computer Science & Engineering.) from MBM Engineering College Jodhpur in 1994. ME (Computer Science & Engineering.) from NITTTR, Punjab University, Chandigarh, India; She has more than 15+ years' teaching experience (from Aug 1995). She is presently working as Head of Department (CS & IT) in Govt. Engineering College Ajmer. She has several papers published in international & national journal/conferences. She is also responsible person in different administrative department and giving guidance to major projects of B. Tech students. She is also the guide of more than 10 students of M. Tech thesis. She is also organised many national conferences and workshop.



Vipul Sharma has received his B.E degree in CSE (Computer Science & Engineering) in 2009 from Government Engineering College Ajmer affiliated to University of Rajasthan. He is currently working as a faculty in CSE department of Govt. Engineering College, Ajmer. His research interest includes DBMS (Database Management Systems), SE (Software Engineering).



Anil Kumar Dubey has received his B. Tech degree in Information Technology, from GNIT Greater Noida (UP Technical University) in 2008 and M. Tech from Govt. Engineering College Ajmer in 2011 (Rajasthan Technical University- Kota), Currently working as a Faculty in CSE



department at Govt. Engineering College Ajmer. He has presenting several papers in international & national conferences. Her presented paper is indexes in reputed journals and several digital libraries like IEEE. His research interests include software reliability, software construction, software reuse, Soft computing, HPSC & SCM. He as Reviewer Committee member of many international journals (like Springer, Elsevier etc) and international Conferences (like IEEE, ACM etc) and Review 10 research papers allotted editor board. He is member of various technical research societies such as IEEE Computer Society, Computer Society of India & EDAS etc.