

**SUPPLY CHAIN MANAGEMENT: AN INNOVATIVE CONCEPT**

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**ABSTRACT:**

In the modern era, changes in business environment have contributed to development of supply chain networks. Supply chain management has emerged as new key to productivity and competitiveness of manufacturing and service enterprises. It is a network of entities that start with suppliers' supplier and end with customer's custom the production and delivery of goods and services. SCM is strategic and systematic effort of various business activities within and outside organization to improve long run performance of organization. So, SCM has become very important topic and structure of supply chain must be properly understood for gaining their benefits. This paper focuses on important areas or significant issues in supply chain management and SCM paradigm in PSU in India.

**Keywords: supply network, Supply chain management, ITEC, Buyer-Supplier Relationships**

**1. Introduction:** Supply Chain Management is a network of supplier, manufacturing, assembly, distribution and logistics facilities that perform the function of procurement of material, transformation of these material into finished product and distribution of these product to customers. So, SCM is the management of material, money, men and information within and across the supply chain to maximize customer satisfaction to make competitive effectiveness. SCM is the management of upstream and downstream relationships with suppliers and customer to deliver superior customer value at less cost. It is major application area for internet technologies and electronic commerce (ITEC).

According to Berry "SCM aims at building trust, exchanging information on market needs, developing new product and reducing supplier base to particular OEM (original equipment manufacturer ) so as to release management resources for developing long term relationships"

According to council of supply chain management professionals (CSCMP) "SCM encompasses the planning and management of all activities involved in sourcing procurement, conversion and logistics management. It integrates supply and demand management with in and across companies".

**2. Literature Review :** The review of related literature gives the researchers an understanding of research methodology describe the way of study and bring researcher up to date information regarding work which other have done. SCM has received attention since the early 1980's. It entered the public domain when Keith Oliver, a consultant at Booz Allen Hamilton used it in an interview in financial times in 1982. Jones and Riley (1985) presents that SCM is an integrative approach to dealing with planning and control of material flow from supplier to end users. A number of books, articles and researchers in mid 1990 's to give clear definitional constructs and conceptual framework on SCM.

Lee and Billington (1992) describe SCM as a network of manufacturing and distribution sites that procure raw material, transform them into intermediate and finished products and distribute them to customer. The objective of SCM is to optimize performance of chain to much value as possible for least cost possible. Scott (1993) in his research presents the concept that globalization, outsourcing and IT have motivated many companies such as dell and Hewlett Packard to successfully operate collaborative supply network for strategic activities.

Tan et.al (1998) presents SCM as management philosophy that extends traditional intra-enterprise activities by bringing trading partners together with goal of optimization. In 2000, SCM become a well recognized area of academic debate having international presence. Lummus et.al (2001) and Mentzer et.al (2001) focus on SCM strategies. In 2002 Ho et al emphasizes empirical study on SCM .Burgees et.al (2006) came up with a structured literature review on SCM which is based on 100 randomly selected articles.

A number of studies have been conducted by scholars such as Chem. and Paulraj (2004), Tracey et.al (2004), Cousins et.al (2006), Sachan and Datta (2005) which provide excellent review on SCM. Their papers define concepts, principals, nature and significant constructs in field of SCM. Their study represents a set of seven constructs i.e. Leadership, intra and inter organisational relationships, logistics, process improvement, Information system and performance measures. So, literature review of different scholars helps in analyzing and monitoring performance of suppliers on criteria of product quality. It also prevents a set of management techniques and tools to analyze successful SCM strategies. The importance of this area is also seen by significant research in last 5 years and also proliferations of supply chain solutions and supply chain companies (e.g.i2,,manugistics etc).

Fawcett et.al (2008) presents in their research solutions to SCM barriers like IT deficiencies, lack of alliance guidelines. He said that transparency, collaborative planning, internet, attention to human factor and target segmented customer are necessary to make SCM successfull. All major ERP companies using SCM for solutions to supply chain problems in their packages.

### 3. Components of SCM:

As organizations focus on core competencies and becoming more flexible, they reduce the ownership of raw material sources and distribution channels. These are given to other firms for better or effectively performance. So, less control and more supply chain partners creates the concept of SCM which helps to improve trust and collaboration among supply chain partners. SCM has two major components

- ✓ **Front-end Component**
- ✓ **Backend Component**

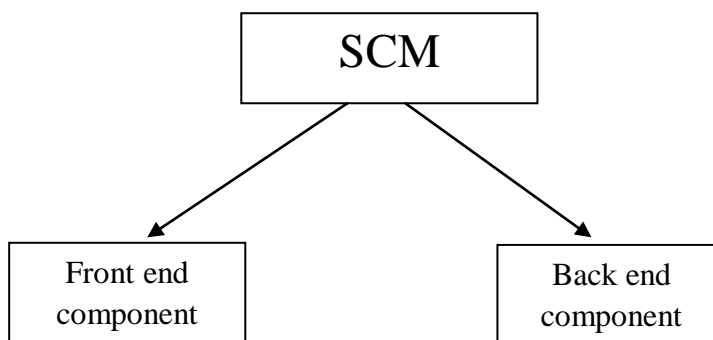


Figure 1 Component of SCM

- ✓ **Back end Component:** It includes supply facilities, retailer, distributors warehouses, logistics facilities. It includes
  - **Supplier Management:** Supplier selection, optimum personnel policies etc.
  - **Production Management :** plant location, production line selection, scheduling, and capacity planning.
  - **Channel Management:** Warehouse location, demand forecasting, customer allocation.
  - **Transportation Management:** Selection of ports, direct delivery vehicle scheduling and selection of logistics model.

- **Product development and commercialization** : Product and process selection, real time monitoring and control integrated scheduling.

For Management of all above components, different models of SCM are used .

- Stochastic Models(Markov chains, queuing networks)
  - Optimization Models( LP,ILP,MILP)
  - Simulation.
- ✓ **Front end Component:** This Component includes processing and information flow to give strength to backend components operations. It uses internet for management of supply chain partners. Basic technologies used under it.
- EDI ( Electronic Data Information )
  - Electronic Payments protocols
  - E-Logistics
  - Electronic business process optimization
  - Internet based shared services.

#### **4. Significant Area of SCM/Issues in Supply Chain Management:**

The main objective of SCM is to provide a strategy which helps us to build up and increase sustainable competitive advantage by cost reduction but maximum customer satisfaction. In SCM we have to manage different areas whose effectively running led to successful SCM.

- **Customer Service Management:** Successful SCM requires downstream integration of customer as well as management of supplier. So customer relationships play a vital role in an organization. In this management, efforts are made by organization to provide best service to their customers which are the source of customer information. For this, their needs are estimated and fulfilled to induce positive feelings for organization.
- **Procurement Management:** It includes resources planning, supply sourcing, negotiation, inbound, transportation handling and order placement i.e. coordinating suppliers for the purpose of supply continuity. For this strategic plans are made to support manufacturing flow of new products.

- **Information Management: inappropriate** communication can lead to disaster in business so SCM models should be designed, which provide appropriate flow of information ERP (enterprise resource planning) helps in delivering high performance. Information sharing protocols give manufactures more accurate demand information so IT architecture helps SCM to create a base in modern era for successful working.
- **Performance Measurement Management:** It is very important tool which provide long term success. According to experts, measurement of performance internally on externally important in creating and maintain competitive edge. Measurement can be done in many ways like on basis of cost and efficiency, return on investment, return on sales and improvement models by organization. It must be consistent with overall strategy of supply chain. It should be easy to understand and enable supply chain to fix standards for each element so that bench marking of performance is done.
- **Financial Management:** SCM also includes managing finances of organization. Accounts payable , inventory management, billing accuries, possibilities of sharing costs are few key financial activities that need to be defined well in SCM model.
- **Outsourcing/Partnership:** In modern era, organizations make sub-contracts with specialists or logistics partners for provision of transportation, warehousing and inventory control. So, for managing and monitoring partnerships of different suppliers/partners strategic decisions are taken very carefully. These collaborative partnerships can be achieved through trust and commitment which is another big issue in SCM. So careful development of supply chain partnerships helps in reducing cost, improve service and to gain competitive advantage.

##### 5. SCM Paradigm in Public Sector Undertakings in India:

- **Petroleum Products :** The bulk of the major petroleum product(s) required in the country are indigenously produced, but at the same time significant proportion of crude and finished products are being imported to meet the national demand. This requires the construction of a global supply chain that should withstand the vagaries of the “petroleum politics”. Petroleum products are needed through out the country on a priority basis. This requires a well designed and feasible transportation and distribution network, integrated with the

production plan(s); distribution network; pricing policy; national and regional demand policies etc..

- **Steel Industry:** This industry depends on three major categories of supplies for the procurement of raw materials: Coal/coke, Minerals (iron ore, limestone etc) and electricity. This industry needs a well designed a methodology for SCM, wherein it may be controlling the production of the raw materials to an extent, and depending on demand, supplementing with externally supplied raw material..
- **Food Grain Procurement and Distributions:** As agriculture is an “industry” where the type of product produced depends on the geo-physical characteristic of the region; the grain that is produced in one region of the country may need to be transported to another region to meet the food requirements in other parts of the country. Therefore, a policy for the location of warehouses in different parts of the country, a plan for optimal distribution of the procured foods grains among these warehouses and to the retail shops under the Public Distribution Scheme (PDS) and for open market transaction is required. A failure in any of the links of this procurement - transportation - storage - transportation - retail can lead to large scale famine in the affected part of the country. The SCM concept can be used to manage the routine and extra-ordinary situations before this industry.
- **Public Health Services :** The public health services through the government run hospitals and dispensaries forms the backbone of the health services offered by the government of India. unavailability of essential drugs and other medical supplies leads to crisis. As the pharmaceutical industry has major players from the public sector undertakings, the hospitals can have a full-fledged integrated supply chain involving these PSU’s. The SCM paradigm can be applied for the procurement and distribution of the life saving medical drugs and other medical items.
- **Import and Export :** The government sector is involved in the Import of essential items needed for the development of the nation, be that petroleum products, steel, coal, food grains, essential drugs, defense stores etc, and export of products that the public sector enterprises produce as a surplus, prime examples of these being mineral products like iron ore, mica etc. This involves the negotiation with the other parties/government organization for avoiding double taxation and charting an optimal delivery system.

- **Banking and financial Services** : With the globalization of the world economy and the liberalization policies pursued by the government of India, the banking sector was the first to recognize the need for offering better facilities to the customers. Also, they were the first to realize the benefits of the use of IT for this purpose. But, the use of IT for integration of the different branches of the banks was not offered to the customers as to provide a location independent real-time banking facility. It was primarily used only to automate the routine working of the banks and for internal administrative purposes. All links in the system needs to be addressed adequately in the design of 'SCM', to meet the end objective of providing efficient services.

**6. Conclusion:** This paper concludes that successful SCM requires integrative system of all business activities by different departments such as collaborative work, joint product development shared information etc. SCM is the management of upstream and downstream value added flows of material, final goods and related information among suppliers , company and final consumers. It uses global network to deliver product and services to customer through integrated working of business activities. under it, different organizations are directly linked by flow of products, finance from one source to a customer .Big challenge is to make a sustainable structure from SCM adoption and implementation. As the world shift from broadcast to interactive paradigm, different opportunities are created for development of SCM. These opportunities can be effectively procured by establishment of mutual trust in supply chain for sharing vital information.

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