Supply Chain Management

Course Code : MGMT4037

Unit – 3 & 5 :SCM Enablers & Contemporary Issues in SCM

Part-II

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❑ Buyer – Supplier Partnership

- As we know that, Supply Chain Performance goals that might be difficult to achieve by individual organizations alone, this efficiency can be achieved through value-based integration in business process.
- Hence, Buyer-Supplier partnership and information integration activities in supply chain gained considerable importance in recent decades as an essential for staying competitive and enhancing performance.
- The key base of business success and supply chain management is emerging new competitive strategy in establishing cooperative relationships with its suppliers.
- Buyer-supplier partnerships have evolved towards a new form in order to respond to intensified competition. The effort towards closer co-operation between buyers and suppliers also results from the global and competitive market place that focuses on quality, cost, flexibility, and delivery which subsequently create a greater need to emphasize inter-firm collaboration with numerous business partners.

❑ Elements Between Buyer and Supplier

The basic elements building strong relationship between buyer and supplier :

1. Trust

- Trust is a very powerful force that has an impact in terms of decisions, actions and result in efficiency from both side supplier and buyer.
- It play most important role in building up strong relation between buyer and supplier for long term trading. Where a firm can trust its partner, both initial negotiations are eased.

2. Information integration:

- It refers to sharing of key information along the supply chain network which enabled by information technology (IT).
- Information integration is a key driver of effective and efficient supply chain by speeding up the information flow, shortening the response time to customer needs, providing enhances coordination and collaboration and sharing the risks as well as the benefits.

Quality information and Real- time information these considered in this.

❑ Contemporary Issues in SCM in Indian Companies

- Reduced inventory goals require flexible, high-velocity manufacturing strategies that can enable a quick response when unexpected changes in demand occur.
- Expanding distribution systems across the national boundaries and becoming global.
- RFID compliance projects emerge as industry requirement, but long-term improvements to enterprise planning are unclear and ROI is yet to be identified.
- Enterprise performance analytics needed to help improve planning and optimize decision making.
- Rapid, low-cost development and delivery of new products using web-based Collaboration and procurement.
- Increased demand responsiveness requires a "demand-driven supply network" (transformation from "push" to "pull" operations) Collaboration and closed-loop planning environment necessitates clean, synchronized data.
- Disconnected demand, supply, and financial plans make it difficult to reconcile plans with reality, and to re-plan accordingly.
- Multiple echelons and constraints in global, distributed supply chain requires incisive collaboration and instant visibility of critical planning data.
- Increasingly complex supply chain processes impede best-practice decision-making and management of data transfers.

❑ Emerging And New Information Technology Solutions For Supply Chain Management

- **LEAN Approach**

– Lean supply chain management is not exclusively for those companies who manufacture products, but businesses who to streamline their processes by eliminating waste and non-value added activities.

– Companies have a number of areas in their supply chain where waste can be identified as time, costs or inventory.

– To create a leaner supply chain companies must examine each area of the supply chain. Understanding the difference between value and waste and value-added and non-value – added processes is critical to understanding lean.

– Sometimes it is not easy to discern the difference when looking at an entire supply chain.

Lean principle focus on creating value by: Specifying value from the perspective of the end customer. Determining a value system by: identifying all of the steps required to create value.

❑ Cont…

- **Green SCM**

– Green Supply Chain Management is all about delivering products and services from suppliers, manufacturers to end customers through material flow, information flow and cash flow in the context of environment.

– Traditional Supply Chain Management focuses on Total Quality, optimum Cost and best service which in some way contributed to environment.

– Today's Green Supply chain management mandates to incorporate the environmental idea in each and every stage of the product and service in a Supply Chain.

– Hence Supply chain managers have a great role in developing innovative environmental technologies to tackle the problems faced by the economy on environmental problems and communicate this to every stake holder in the chain. Lean Manufacturing is eliminating waste in every stage of supply chain.

– It focuses on producing economically and environmentally friendly quality products which meets the customer expectation. It is the best practice to be followed since it reduces inventory, saves space and energy.

Radio Frequency Identification (RFID)

- The bar code was intended to improve efficiencies in the retail space, but the bar code cannot uniquely identify the specific object such as when items are produced, the lot of the items was made and when will the items expire. RFID was able to take care of these issues.

- Both RFID and Bar codes are indeed, quite similar, both being auto-ID technologies, which are intended to provide item identification. The primary difference is the reading data from the items. In bar coding, the reading device scans a printed label with optical laser or imaging technology and in RFID; the reading device scans a tag by using radio frequency signals.

- The tag is a microchip connected to a small antenna. The chip can capture a certain amount of data. The radio waves via which the tag and the reader communicate with each other can vary from low frequency (125 KHz) to microwave frequency (6 GHz).

- **Software Agents**

- Artificial Intelligence emerged into the paradigm of software agents with the application area of multi-agent systems.
- A software agent is a software system, which has attributes of intelligence, autonomy, perception or acting on behalf of a user.
- Agents can behave autonomously or proactively.
- The intelligence of an agent refers to its ability of performing tasks or actions using relevant information gathered as part of different problem-solving techniques such as influencing, reasoning and application specific knowledge.
- Java has been the most common tool for building such intelligent agents which are increasingly becoming mobile.
- Most of the agent platforms available today like Agent Builder, Aglets, Voyager, JADE, ZEUS and FIPA are implemented using this language.

❖ Ways to build Green Supply Chain

- **Product Selection:** Designing the product in such a way that it should be safe for use, creating least pollution and consumes less energy. It should not be hazardous during storage, transportation and also while disposing once it reaches end of its product life cycle. DFE (Design for Environment) is about developing products that has no negative side effect for human and environment, cost effective and environment friendly. This practice has to be implemented in product design stage.

- **Process and production:** Process has to be designed so that it conforms to the Green Supply Chain Management initiatives to reduce environmental negative impact. Efficient and effective production strategy to reduce energy consumption which includes reducing waste material, air and water emissions. This contributes to lean manufacturing. All possibilities have to be checked for recycling the Scrap materials.

- **Business Partners selection:** Selecting suppliers who have proven track records on practicing lean manufacturing and using environment friendly material. Involving vendors during product conception and design so that they can share their best practices to best align your strategy with the customer strategy on going greener supply chain. Ultimately it results in customer delight and satisfaction.

❖ Ways to build Green Supply Chain Cont…

- **Logistics Design:** Logistics partners have to be included while product designs so that it improves cubic space utilization and effective fleet management. Back hauling should be practiced where the empty vehicle should be used to collect the goods from other sources once after delivering finished goods.
- **Packaging Material:** Replacing package materials which are eco-friendly. Fumigation certificate should be obtained for international shipments for wooden pallets and crates. Packaging material has to be designed in such a way it can be re-used and re-cycled. Packaging should be robust so that any hazardous material inside it doesn't spill over and cause environmental hazard.
- **Reverse logistics Design:** Materials after consuming should be effectively used for re-use, repair, recycle, remanufacture and redistribution. It calls for reusing containers and pallets, redesigning and recycling package materials etc. Reducing pollution during transportation are important activities of reverse logistics. Proper design of Reverse logistics contributes greater towards Green Supply Chain Management.

❖ Ways to build Green Supply Chain Cont…

- **Information Technology:** A Green approach to IT has to be achieved through various automatic processes thereby reducing carbon foot prints. Paper usage has to be minimized through automatic invoice/payment processing. Using EDI for creating/transmitting orders.
- **Green Building:** Deploying greener practices in Design, construction and maintaining the buildings. Using energy efficient bulbs, natural lightning saves considerable energy. Water has to be recycled for day to day use. LEED certification (Leadership in Energy and Environmental design recognized by US and other countries) has to be obtained. Investment in Renewable energy sources such as solar, wind etc. are needed for sustainable green practice.

❖ Benefits of Green SCM

1. Green SCM will help us to gain a competitive advantage and help us to attract new customers.
2. Increased use of resources, improved efficiency and reduced production cost.
3. It contributes greater towards improved financial performance.
4. Reduces risk by avoiding hazardous material that leads to environmental effect.
5. Improved quality of products and services gives higher customer delight and reputation.

Hence trying to deploy all the above designs in each and every stage of a supply chain will in turn creates values financially and socially to the customer. Hence we can go a step further and call the chain as a value chain. Ultimately all these practices have to be sustainable and should keep improving continuously by researching and innovating new ideas.

- **One classification of agents given by Haag (2006) suggests that there are only four essential types of intelligent software agents:**
  - **Buyer agents or shopping bots.**
  - **Monitoring and Surveillance Agents.**
  - **User agents (personal agents).**
  - **Data mining agents.**

- **Decision Support Systems**

Decision Support Systems (DSS) are a specific class of computerized information systems that supports business and organizational decision-making activities.

A properly designed DSS is an interactive software-based system intended to help decision makers compile useful information from raw data, documents, personal Knowledge, and/or business models to identify and solve problems and make decisions.

❑ Web Services

Web services are application interfaces accessible via Internet standards that use XML and that employ at least one of the following standards: Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL) or Universal Description, Discovery and Integration (UDDI).

These standards, and the next generation standards that are being built on them, are defining the way that forward-thinking enterprises manage lightweight integration tasks.

❑ Electronic Commerce

Electronic commerce refers to the wide range of tools and techniques utilized to conduct business in a paperless environment. Electronic commerce therefore includes electronic data interchange, e-mail, electronic fund transfers, electronic publishing, image processing, electronic bulletin boards, shared databases and magnetic/optical data capture. Companies are able to automate the process of moving documents electronically between suppliers and customers.

❑ E-tailing:

This company is renowned for the fact that it only sells books over the internet and doesn't even take telephone orders. Customers of Amazon interact with its website and carry out a number of functions including:

- Browsing readers' reviews of books;
- Reading feature articles about books and authors similar to those found in magazines and newspapers;
- Searching for details of a book based on information such as the author's name or the title of the book;
- Browsing the books which are the Amazon bestsellers;
- Ordering books using credit cards or some other similar payment method;
- Tracking the progress of an order.

❑ e- Procurement:

The term procurement is used to describe the purchase of goods and services which are not directly used in the main business of a company. For example, a car manufacturer will procure stationery for its employees or procure training courses for them to attend in order to improve their skills.

An e-procurement system which would automatically take the form produced by the person making the procurement, check that it satisfies all the company rules for procuring the item that is required, carry out authorization if it is below a certain limit or send the form to someone who can carry out authorization and then log the purchaser into the site of the supplier.

❑ E-Auctions:

These are sites on the web which run conventional auctions. There are two types of auction: those that are carried out in real time, where participants log in to an auction site using a browser at a specified time and bid for an article until the highest price is reached and no other bids are forthcoming.

The other type of site – and the most common – is where an item is offered for sale and a date advertised after which no more bids are accepted.

❑ Electronic Supply Chains

Electronic Supply Chains (ESC) refers to those supply chains that are electronically facilitated between or among participating firms. Also called Virtual Supply Chains, these are realized in two forms, EDI-based or Internet based.

EDI generally connects firms through proprietary Value Added Networks (VAN), whereas the Internet generally connects firms through open networks which use standard protocols.

The ESC links trading partners to allow them to buy, sell and move products, services and cash.

Due to the low implementation costs, the introduction of the Internet has brought about opportunities that allow firms to transact with other enterprises electronically

❑ Reverse Logistics

As we all know that Logistics is part of supply chain management process. Whereas the Logistics deals with forward movement of goods within any supply chain, reverse logistics manages the reverse movement of goods, in other words returns management within supply chain function.

Reverse flow is as important as forward movement in any supply chain.

By examining a consumer supply chain process flows, one can conclude that reverse flows are very critical and important function within supply chain to recover the product cost comprehensively and at the same time helps in safe disposal of waste.

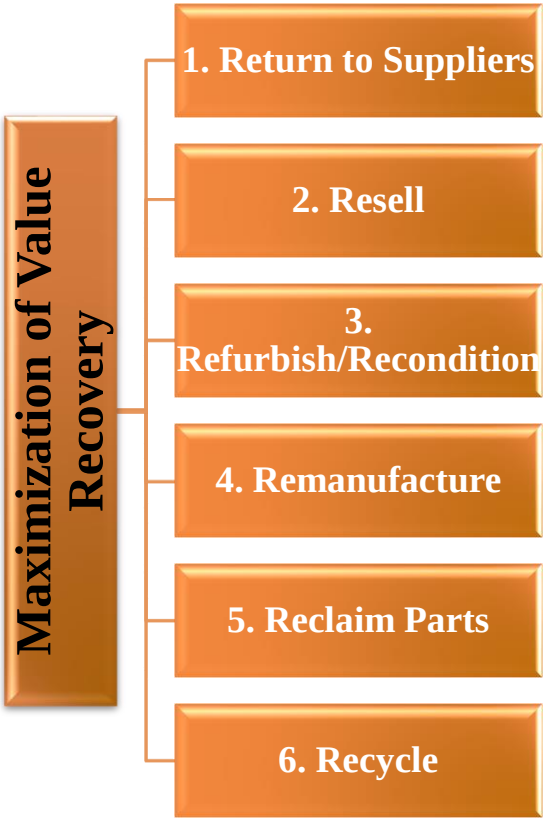
- **Reverse Logistics Functions:**

By examining the definition one can understand that the objectives of reverse logistics are to maximize the value recovery and safe disposal of waste.

Maximization of Value Recovery:

If product intended for a sale is returned by the customer, the product cost is not recovered. One of the basic objectives of supply chain is to maximize the product margins.

In order to achieve this objective, organizations through reverse logistics functions under take the following activities to maximize the revenue recovery.



The reasons that would result in above mentioned activities

1. **Defects**
2. **Product Recalls**
3. **Competitive Reasons**
4. **Abuse**
5. **Charity**
6. **Maximization of Product Margins**
7. **NPI**

❑ Safe Disposal

Materials that contain hazardous elements should be properly disposed to protect the environment from hazardous chemicals and compounds. Materials such as lead, mercury, lithium, and other forms of toxic waste are considered hazardous and subject to strict governmental environmental compliance regulations.

Agencies such as U.S. Environmental Protection Agency (EPA) and state environmental agencies regulate the impact of businesses on the environment. These agencies develop and enforce regulations that implement environmental laws enacted by the government. The second objective of reverse logistics function is safe disposal of waste. Safe disposal has become mandatory due to above mentioned government legislations aimed at protecting the environment.

❑ Industry Scope

Reverse Logistics function is critical to all industries but very important to the following industries:

1. **Publishing –** Reverse flow was introduced several decades ago. In order to encourage sellers to stock new books, publishers began the reverse flow of unsold books. The returned books were used in recycling in order to maximize the product margins.

2. **IT Hardware and Electronics –** This industry is typically defined as, "an industry with 60-day product life cycles and 90-day warranties. Of course customers are going to bring products back." Same as publishing industry, in order to encourage customers to buy new products, companies introduced a marketing technique called trade-in and that encouraged customers to get rid of the old product and own new product and at the same time recover some cost out of old product.

3. **Chemicals and Paints –** "Paint is a mixture of four basic ingredients: Pigments, Resins, Solvents and Additives." It's the solvent used in the paint that determines how it may disposed.

4. **Retail –** Retailers under immense competition offer returns as a competitive strategy to attract customers. However, some abuse returns policy. According to John Shore, 90% of the retailers ignore returns processing and do not have any system in place to manage the returns. The returned products often end up in a corner of warehouse, loosing focus and value ultimately.

❑ Industry Scope Cont…

5. **Consumer Electronics –** In 1998 Consumer Electronics returns were estimated at $13.8 Billion in US alone according to *Techpulse360*. According to *Sprague* returns can account for 2 to 3 percent of a retailer's sales and 5 to 6 percent of a manufacturer's sales in consumer electronics. According to one report annual return rate was as high as 27% in consumer electronics industry in US.

6. **Automotive –** It is a common practice that automobiles at its end of life will end up with salvage yard and some of the parts are recycled. According to *Willam P. Steinkuller,* automotive recyclers handle more than 10 million vehicles every year. Their efforts supply more than 37 percent of the United States ferrous scrap for the scrap-processing industry. It is a common practice in auto industry to remanufacture products.

7. **Food –** Major star hotels engage in charity in distributing the leftovers to the needy. This activity may not result in any commercial gains, but will end up with improved goodwill which may help improve organizations top line revenues. Currently, a local company in Singapore recycles soya bean waste, spent grains and spent yeast into animal feed. A local food waste treatment plant was also set up last year to turn food waste from food courts, hotels and factories into compost and biogas.


Thank You