

Supply Chain Management

Course Code : MGMT4037

Unit - 2 & 4 : Key Process of Supply Chain
Management & SCM Administrator

Part-I

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SUPPLY CHAIN MANAGEMENT

► Unit - 2

Key Processes of Supply Chain Management: Supply Chain Planning; Purchasing in Supply Chain; Supply Chain Network Design & Manufacturing; Inventory and Warehousing in SCM.

► Unit - 4

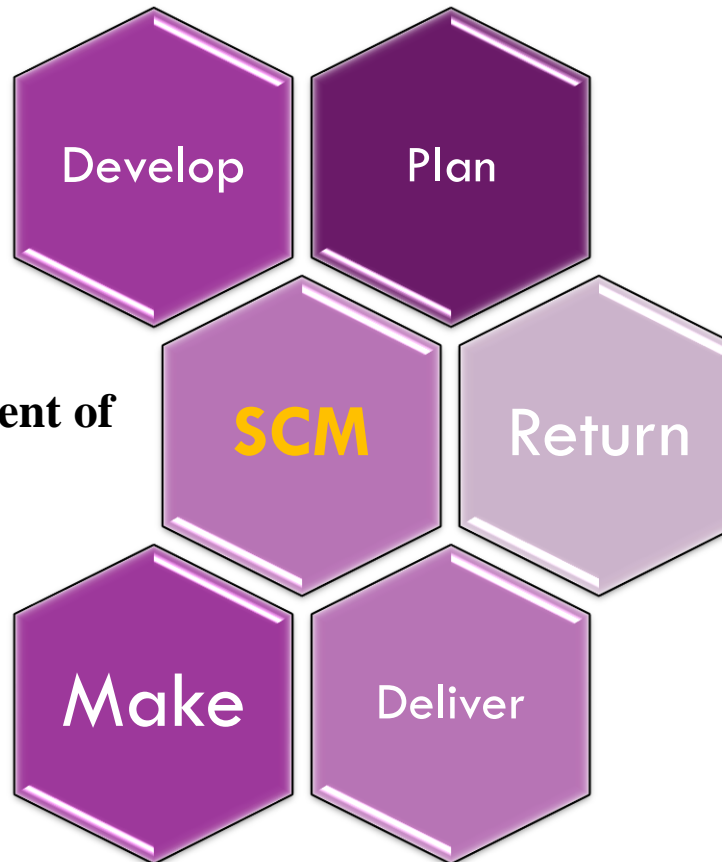
SCM Administration: Supply Chain Cost Analysis & Pricing; Supply Chain Risk Management; HR Issues in SCM; Supply Chain Performance Measurement.

➤ **KEY PROCESSES OF SUPPLY CHAIN MANAGEMENT**

- Supply chain management is defined as the design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally.
- SCM draws heavily from the areas of operations management. Logistics, procurement, and information technology, and strives for an integrated approach
- The theories in supply chain management include resource-based view (RBV), Transaction cost analysis (TCA), Knowledge-based view (KBV), Strategic choice theory (SCT), Total quality management (TQM), Customer relationship management (CRM), etc. Supply chain management is a process used by companies to ensure that their supply chain is efficient and cost-effective. A supply chain is the collection of steps that a company takes to transform raw material into a final product.

➤ COMPONENTS OF SUPPLY CHAIN MANAGEMENT

**The Five Basic Component of
SCM are :**



➤ **COMPONENTS OF SUPPLY CHAIN MANAGEMENT CONT...**

❖ **Plan :**

- The initial stage of the supply chain process is the planning stage. We need to develop a plan or strategy in order to address how the products and services will satisfy the demands and necessities of the customers.
- In this stage, the planning should mainly focus on designing a strategy that yields maximum profit.
- For managing all the resources required for designing products and providing services, a strategy has to be designed by the companies. Supply chain management mainly focuses on planning and developing a set of metrics (A system).

❖ **Develop (Source) :**

- After planning, the next step involves developing or sourcing.
- In this stage, we mainly concentrate on building a strong relationship with suppliers of the raw materials required for production. This involves not only identifying dependable suppliers but also determining different planning methods for shipping, delivery, and payment of the product.
- Companies need to select suppliers to deliver the items and services they require to develop their product. So in this stage, the supply chain managers need to construct a set of pricing, delivery and payment processes with suppliers and also create the metrics for controlling and improving the relationships.

➤ CONT...

– Finally, the supply chain managers can combine all these processes for handling their goods and services inventory. This handling comprises receiving and examining shipments, transferring them to the manufacturing facilities and authorizing supplier payments.

❖ **Make :**

- The third step in the supply chain management process is the manufacturing or making of products that were demanded by the customer.
- In this stage, the products are designed, produced, tested, packaged, and synchronized for delivery.
- Here, the task of the supply chain manager is to schedule all the activities required for manufacturing, testing, packaging and preparation for delivery.
- This stage is considered as the most metric-intensive unit of the supply chain, where firms can gauge (measures) the quality levels, production output and worker productivity.

➤ CONT...

❖ **Deliver :**

- The fourth stage is the delivery stage. Here the products are delivered to the customer at the destined location by the supplier. This stage is basically the logistics phase, where customer orders are accepted and delivery of the goods is planned.
- The delivery stage is often referred as logistics, where firms collaborate for the receipt of orders from customers, establish a network of warehouses, pick carriers to deliver products to customers and set up an invoicing system to receive payments.

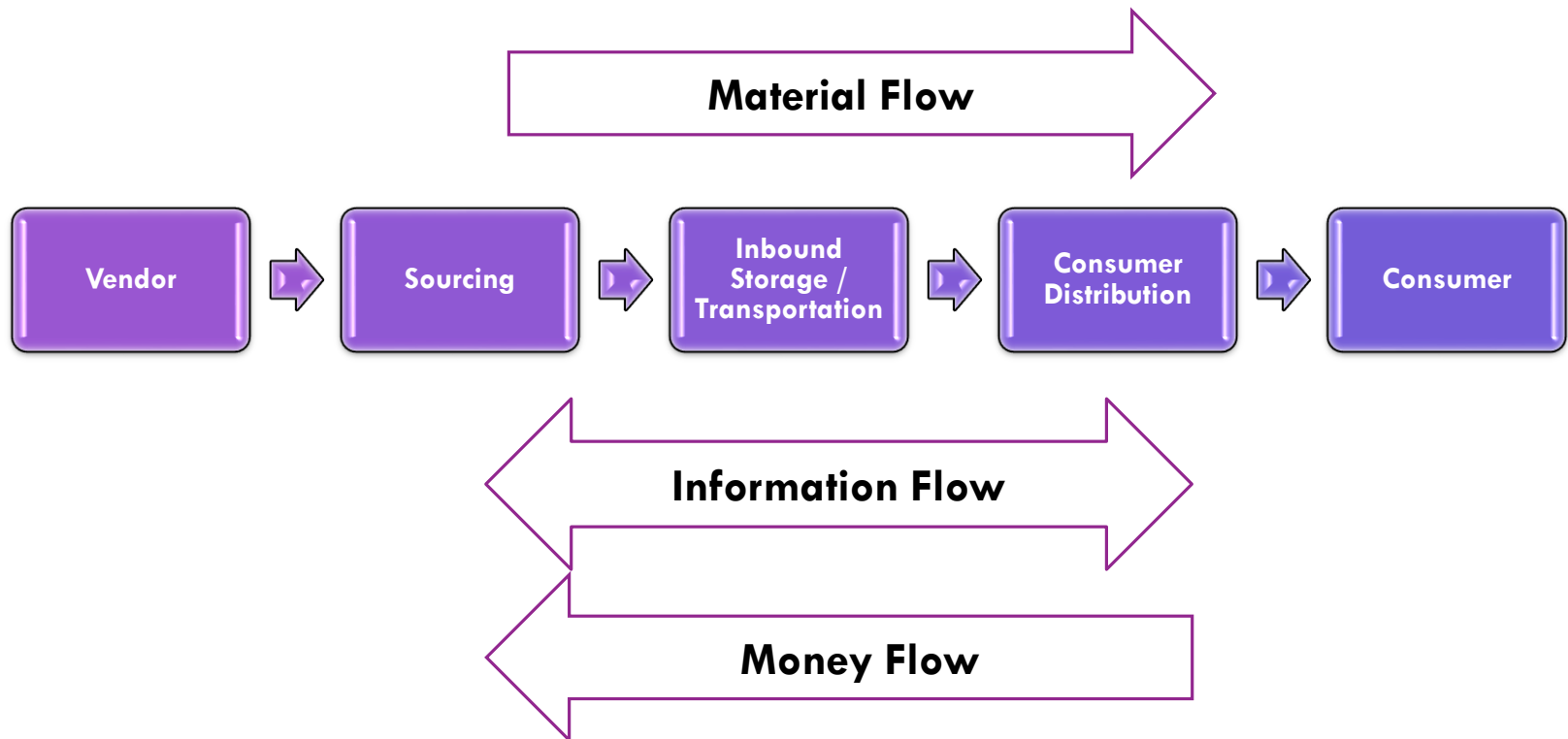
❖ **Return :**

- The last and final stage of supply chain management is referred as the return. In the stage, defective or damaged goods are returned to the supplier by the customer.

Here, the companies need to deal with customer queries and respond to their complaints etc.

❑ TYPES OF FLOW IN SCM :

- I. Material flow
- II. Information/Data flow
- III. Money flow



❑ TYPES OF FLOW IN SCM CONT...

- **Material flow :**

- Material Flow includes a smooth flow of an item from the producer to the consumer. This is possible through various warehouses among distributors, dealers and retailers.
- The main challenge we face is in ensuring that the material flows as inventory quickly without any stoppage through different points in the chain. The quicker it moves, the better it is for the enterprise, as it minimizes the cash cycle.

- **Information/data flow :**

- Information/data flow comprises the request for quotation, purchase order, monthly schedules, engineering change requests, quality complaints and reports on supplier performance from customer side to the supplier.
- From the producer's side to the consumer's side, the information flow consists of the presentation of the company, offer, confirmation of purchase order, reports on action taken on deviation, dispatch details, report on inventory, invoices, etc.
- For a successful supply chain, regular interaction is necessary between the producer and the consumer. In many instances, we can see that other partners like distributors, dealers, retailers, logistic service providers participate in the information network.

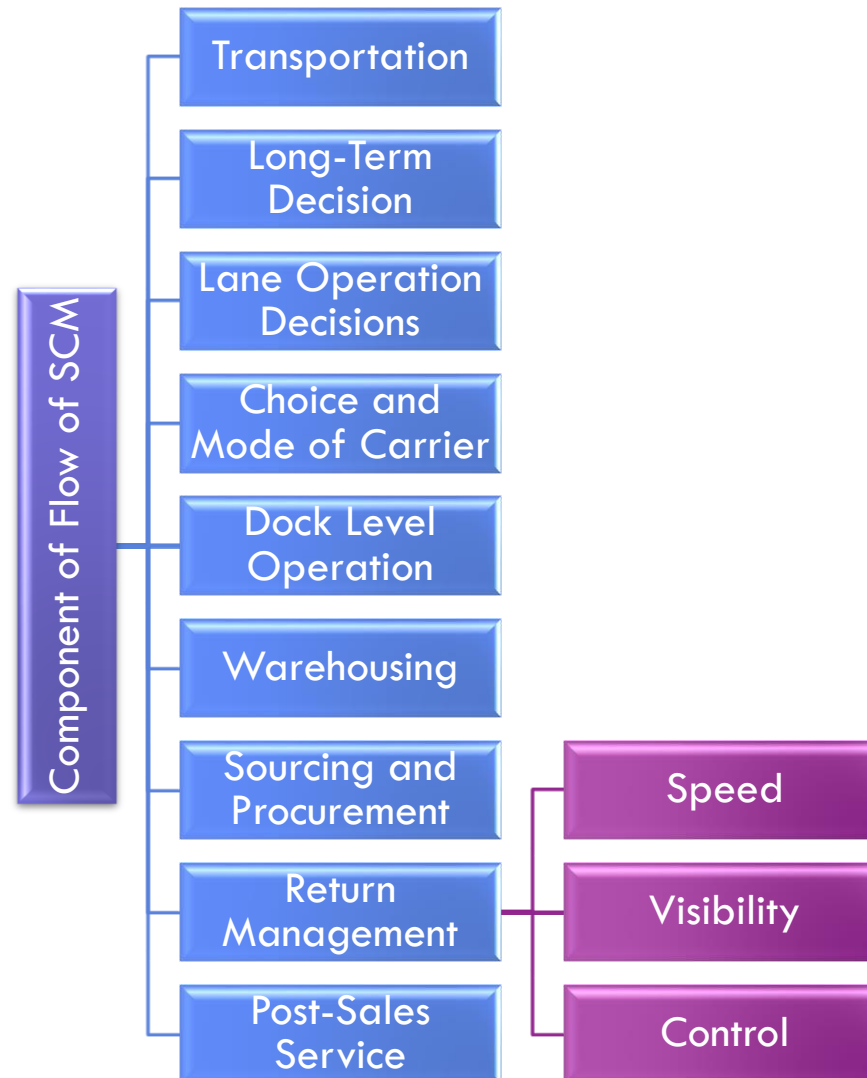
□ TYPES OF FLOW IN SCM CONT...

- Money Flow:

- On the basis of the invoice raised by the producer, the clients examine the order for correctness. If the claims are correct, money flows from the clients to the respective producer. Flow of money is also observed from the producer side to the clients in the form of debit notes.
- In short, to achieve an efficient and effective supply chain, it is essential to manage all three flows properly with minimal efforts. It is a difficult task for a supply chain manager to identify which information is critical for decision-making.

COMPONENTS OF THE FLOW OF SUPPLY CHAIN :

There are different components of flow of supply chain:



❑ DECISION PHASES

- Decision phases can be defined as the different stages involved in supply chain management for taking an action or decision related to some product or services. Successful supply chain management requires decisions on the flow of information, product, and funds that fall into three decision phases.
- The three main decision phases involved in the entire process of supply chain. The three phases are described below:-

✓ Supply Chain Strategy

In this phase, decision is taken by the management mostly. The decision to be made considers the sections like long term prediction and involves price of goods that are very expensive if it goes wrong. It is very important to study the market conditions at this stage.

These decisions consider the prevailing and future conditions of the market. They comprise the structural layout of supply chain. After the layout is prepared, the tasks and duties of each is laid out.

All the strategic decisions are taken by the higher authority or the senior management. These decisions include deciding manufacturing the material, factory location, which should be easy for transporters to load material and to dispatch at their mentioned location, location of warehouses for storage of completed product or goods and many

□ DECISION PHASES CONT...

✓ Supply Chain Planning

- Supply chain planning should be done according to the demand and supply view. In order to understand customers' demands, a market research should be done. The second thing to consider is awareness and updated information about the competitors and strategies used by them to satisfy their customer demands and requirements. As we know, different markets have different demands and should be dealt with a different approach.
- This phase includes it all, starting from predicting the market demand to which market will be provided the finished goods to which plant is planned in this stage. All the participants or employees involved with the company should make efforts to make the entire process as flexible as they can. A supply chain design phase is considered successful if it performs well in short-term planning.

✓ Supply Chain Operations

- The third and last decision phase consists of the various functional decisions that are to be made instantly within minutes, hours or days. The objective behind this decisional phase is minimizing uncertainty and performance optimization. Starting from handling the customer order to supplying the customer with that product, everything is included in this phase.

□MAKE VS. BUY

- Production units are identified mostly with their decision to make or buy. In other words, do they wish to produce the desired product on their own or do they want to purchase it from the foreign market.
- This decision is critical because the third-party suppliers especially in countries like Eastern Europe, China, and other low-cost parts of the world hold out the promise of essential beneficiaries, which the developed nations fail to offer.
- However, the developed countries can easily overcome the expenses cost in the imported material through activities like human resources, information technology, maintenance and customer relations.
- If properly utilized and taken care of, these activities may yield profit rather than leading the nation to suffer more loss. All the expense of outsourcing can be regained through these activities and thus they should not be neglected when the options are considered.

The Make vs. Buy decision of a nation depends on three pillars.

These pillars are:

- ✓ Business strategy
- ✓ Risks
- ✓ Economic factors

□ BUSINESS STRATEGY

The first pillar in the Make vs. Buy decision is the business strategy adopted by a nation. Business strategy strategically engages the importance of the company whose product or service is being considered for outsourcing, in addition to the process, technologies or skills needed to design the product or deliver that particular service.

In simple worlds, companies must opt for outsourcing in the following scenarios:

- Remove the processes, which are intensive on the balance sheet, e.g., capital or labor.
- Minimize the costs.
- Achieve flexibility for adjusting output in comeback to changing demand.
- Phase out management of paperwork, documents or training.
- Monitor fewer workers.
- Have access to new process or network tools and technologies.
- Leverage external expertise.

In fact, if a product relies on proprietary technology or intellectual property or if a product or an operation is critical for the company's performance, it is recommended to select in-house skills & abilities rather than outsourcing.

❑ RISK

- The Make vs. Buy strategy is risks involved with any decision. The major risk factors involved in making a product in the home country or purchasing it from foreign countries are quality, reliability, and predictability of outsourced solutions or services. Along with these, there are risks inherent in the process of labeling and selecting the right supplier and structuring a workable ongoing relationship.
- When we have numerous suppliers, a single failure in the supply chain may not be deadly. Even when the suppliers are making parts of an item instead of that completely furnished item, there will be errors in manufacturing. These errors should be identified before the products are assembled so that the faulty item cannot be delivered to the consumer directly we know outsourcing opens up a broad array of new risks.
- It is very important to acknowledge the risks that are related to the location of an external supplier. Apart from judging the source country's political stability, companies require to examine the safety and lead times of shipment schedule.

❑ ECONOMIC FACTORS

The Make vs. Buy strategy is the economic factors residing in the country that needs to decide if to buy a product or make it on its own. The various economic factors comprise the effect of outsourcing on capital expenditures, return on invested capital and return on assets, along with the probable savings gained by outsourcing.

To study the importance of pricing mechanisms, let's consider those companies that base their decision on if they need to outsource solely on approximate calculations of the in-house as compared to the external costs related to the outsourced function, for example, the cost of each item produced or the price of running an HR department or an IT network instead on the total costs.

The costs that are often neglected in outsourcing manufacturing operations are as follows:

- Transportation and handling charges.
- Expanded, extended inventories.
- Administrative bills like the supplier management and quality control rates. Casted complexity and its effect on lean flows.
- Minimal return on invested capital.
- Production dependability and quality control.

❑ NETWORK DESIGN

- The network design in supply chain determines its physical arrangement, design, structural layout and infrastructure of the supply chain. Here the major decisions to be made are on the number, locations and size of manufacturing plants and warehouses and the assignment of retail outlets to warehouses, etc. This stage witnesses some other major sourcing decisions as well. The basic time duration for planning horizon is few years. Many major decisions involving the long-term location, capacity, technology and supplier selection have to be made by considering the probable uncertainties present in the market development accompanied by changing economic and legal conditions
- The network design in supply chain concentrates mainly on the development of multistage stochastic optimization methods required for decision support under demand, freight rate and exchange rate uncertainty. Here, we will discuss the various strategies to study the uncertainty and scenario modeling.
 - Warehouse location
 - Traffic network design
 - Restoring

❑ NETWORK MODELS

Supply chain networks present different types of models that help us understand the various optimization methods used for studying the uncertainty and scenario modeling.

There are six distinct supply chain network models, as given below:

1. Producer Storage with Shipping
2. Producer storage with direct shipping and in-transit merge (cross docking).
3. Distributor or storage with package carrier delivery.
4. Distributor storage with last mile delivery.
5. Producer or distributor storage with customer pickup.
6. Retail storage with customer pickup

The supply chain network basically deals with three major entities: Producer, Distributor and Merchant. Two different options are available, i.e., customer pickup or door delivery. For example, if the door delivery option is opted for, there is transport between producer and distributor, distributor and merchant and producer and merchant. The distribution system decision is made on the basis of the choice of the customers.

❑ INVENTORY MANAGEMENT

- As seen under the major objectives of supply chain, one of the basic objectives of SCM is to make sure that all the activities and functions within as well as across the company are managed efficiently.
- There are instances where efficiency in supply chain can be ensured by efficiencies in inventory, to be more precise, by maintaining efficiency in inventory reductions. Though inventory is considered a liability to efficient supply chain management, supply chain managers acknowledge the need of inventory. However, the unwritten rule is to keep inventory at a bare minimum.
- Many strategies are developed with the objective of streamlining inventories beyond the supply chain and holding the inventory investment as low as possible. The supply chain managers tend to maintain the inventories as low as possible because of inventory investment. The cost or investment related with owning inventories can be high. These costs comprise the cash outlay that is necessary for purchasing the inventory, the costs of acquiring the inventories (the cost of having invested in inventories rather than investing in something else) and the costs related with managing the inventory.

❑ ROLE OF INVENTORY

There are many instances where we see the concept of collaborative relationship being marked as the essence of supply chain management. However, a deeper analysis of supply chain relationships, especially those including product flows, exposes that at the heart of these relationships is inventory movement and storage.

More than half of it relies on the purchase, transfer or management of inventory. As we know, inventory plays a very important role in supply chains, being a salient feature.

The most fundamental functions that inventory has in supply chains are as follows:

- To supply and support the balance of demand and supply.
- To effectively cope with the forward and reverse flows in the supply chain.

Companies need to manage the upstream supplier exchanges and downstream customer demands.

Thank You