



Supply Chain Management

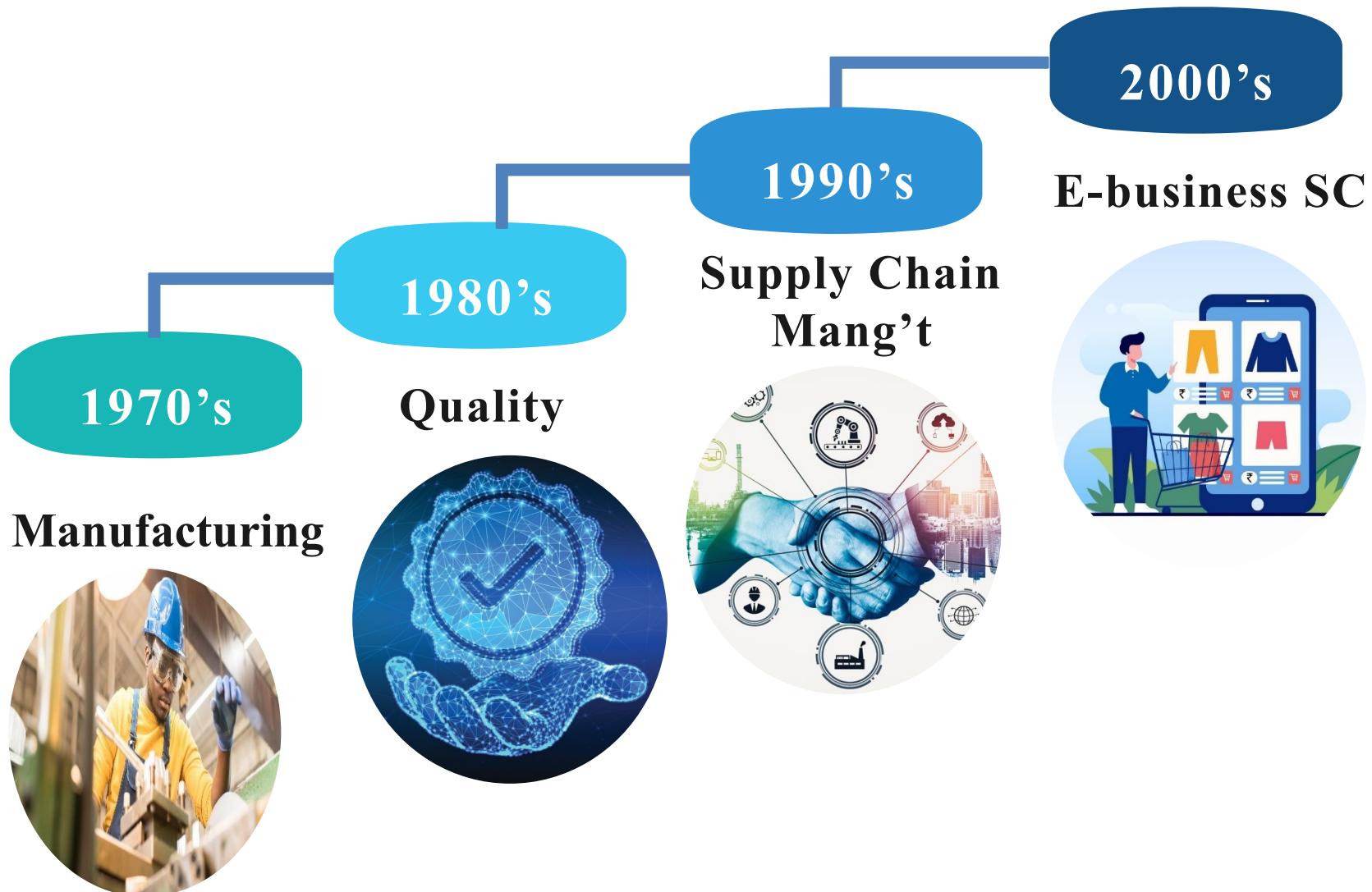


Objectives

The participant will be able to :

- Understand what a supply chain is and what it does.
- Identify supply chain drivers and components
- Explore the difference between Logistics and SCM
- Get introduced to SCM process and process view
- Demonstrate Decision Phases in SCM
- Acknowledge SCM Performance Measurement
- Get introduced to E-business SCM

Business Trends in Manufacturing



WHAT IS SUPPLY CHAIN?



A supply chain is an entire system of producing and delivering a product or service, from the very beginning stage of sourcing the raw materials to the final delivery of the product or service to end-users.

It refers to the entire network of companies that work together to design, produce, deliver, and service product

Why Supply Chain Management

Effective Supply Chain Management has Positive effect on:



Profit



Quality



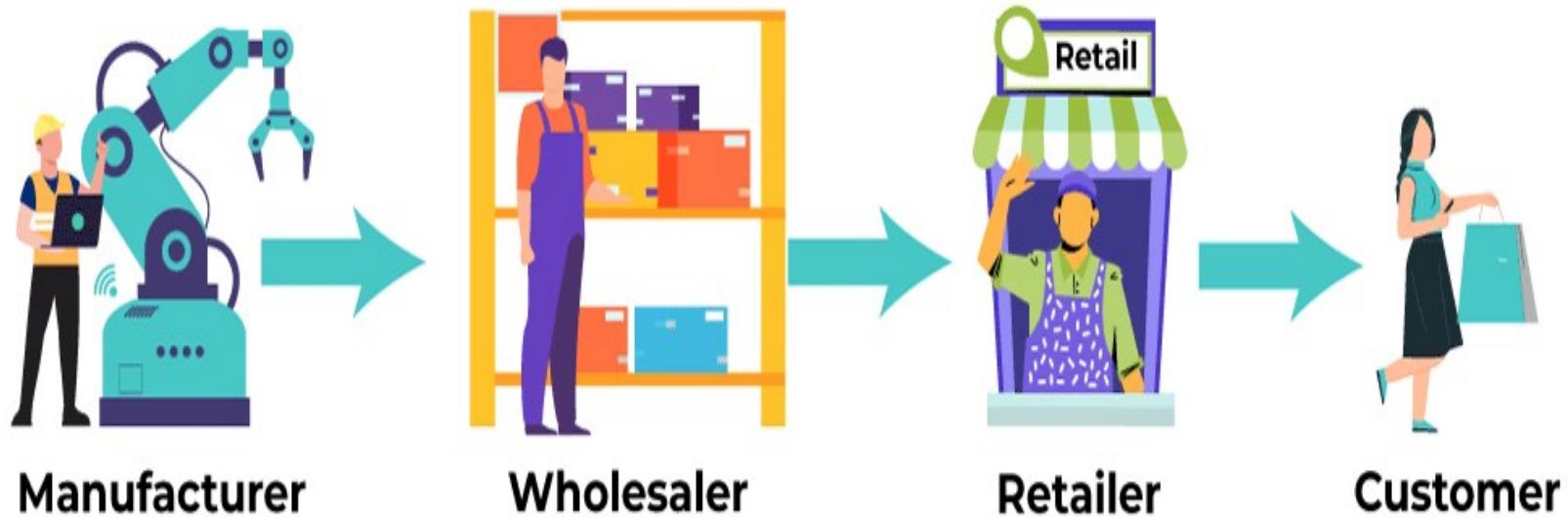
Customer Experience



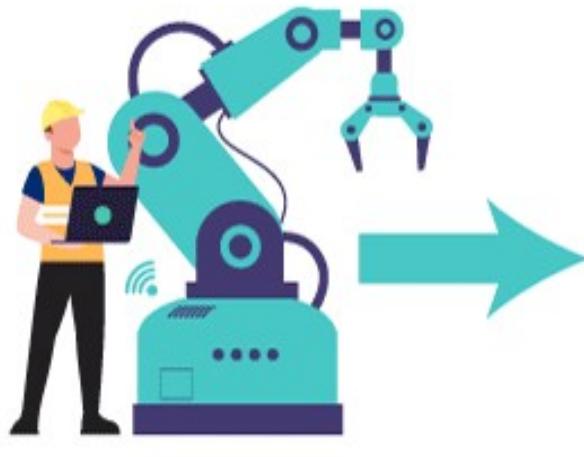
Efficiency

Maximize overall **value** created

Component in the Supply Chain



Component in the Supply Chain



Manufacturer

- Producers or manufacturers are organizations that make a product.
- This includes companies that are producers of raw materials and companies that are producers of finished goods

Component in the Supply Chain



- Distributors are companies that take inventory in bulk from producers and deliver a bundle of related product lines to customers.
- Distributors are also known as wholesalers.

Component in the Supply Chain



Retailer



- Retailers stock inventory and sell in smaller quantities to the general public.
- This organization also closely tracks the preferences and demands of the customers that it sells to.

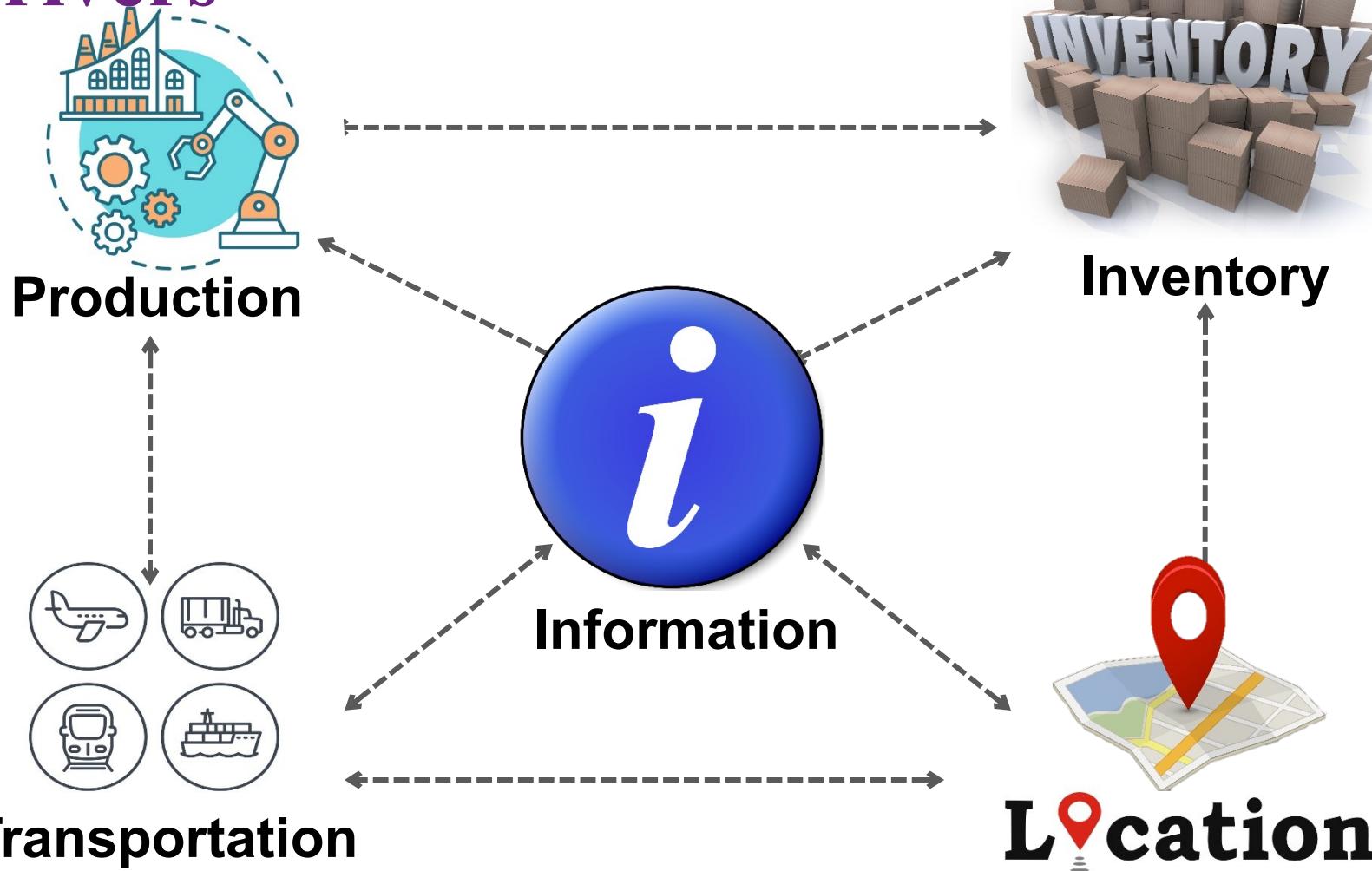
Component in the Supply Chain



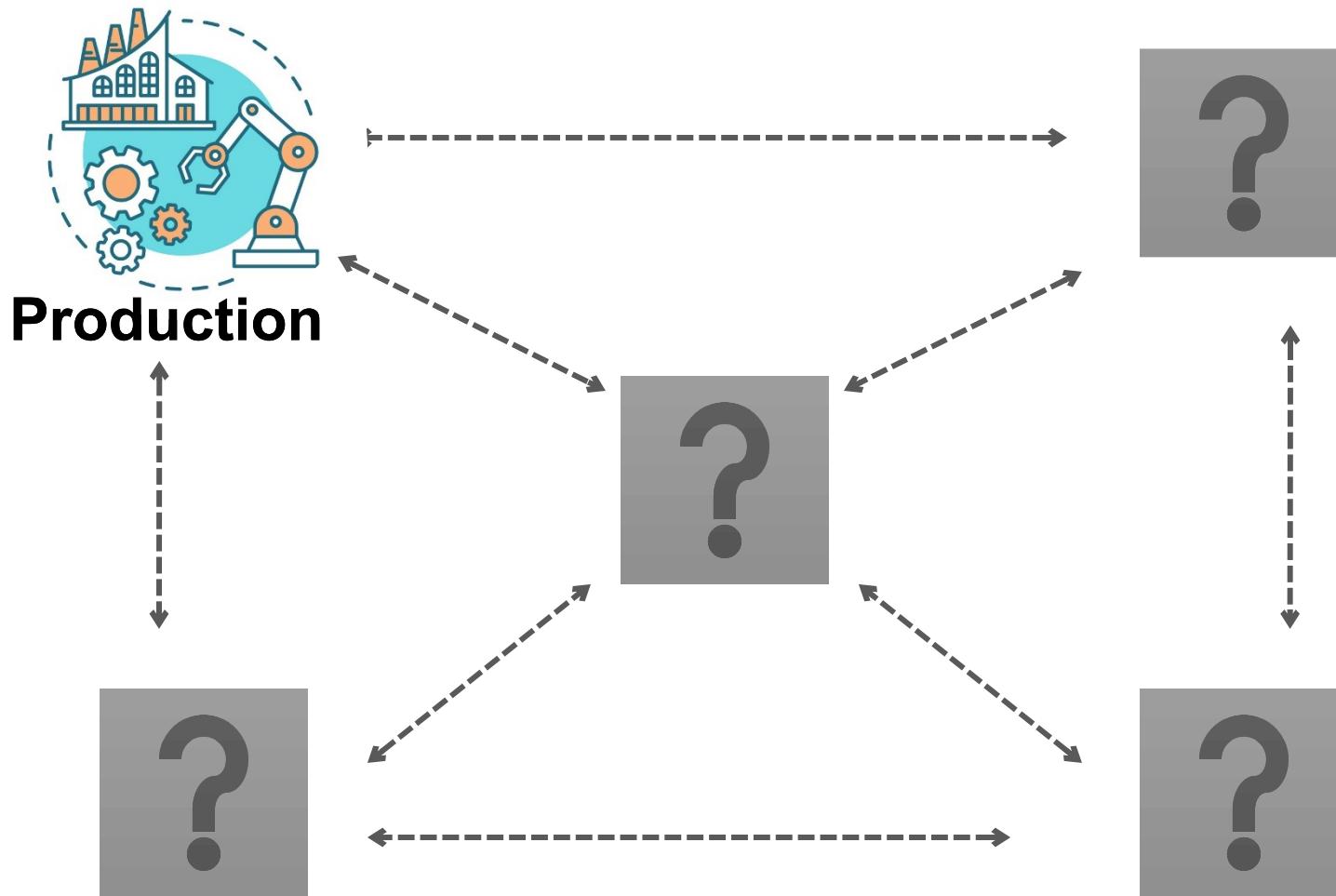
- Any organization that purchases and uses a product.
- A customer organization may purchase a product in order to incorporate it into another product that they in turn sell to other customers.
- A customer may be the final end user of a product .

- Service provider
- Measures
- Process : plan , make

Supply Chain Drivers



Supply Chain Drivers



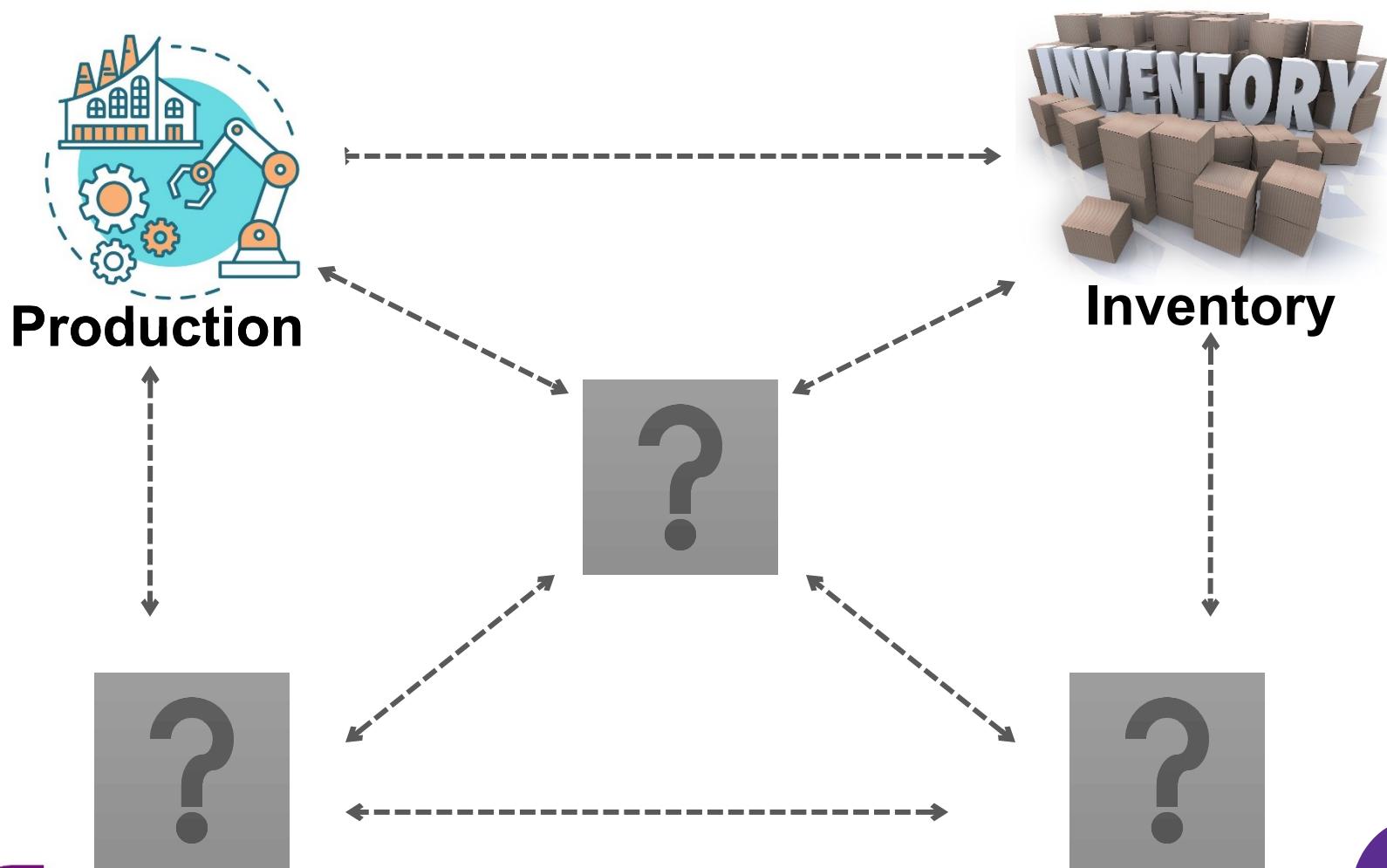
Supply Chain Drivers

Production
What, how, and when
to produce



- ✓ The capacity of a supply chain to make products.
- ✓ The facilities of production are **Factories** and **Warehouses**.
- ✓ The trade-off between **Responsiveness** and **Efficiency**.
- ✓ The more excess capacity that exists, the less efficient the operation becomes

Supply Chain Drivers



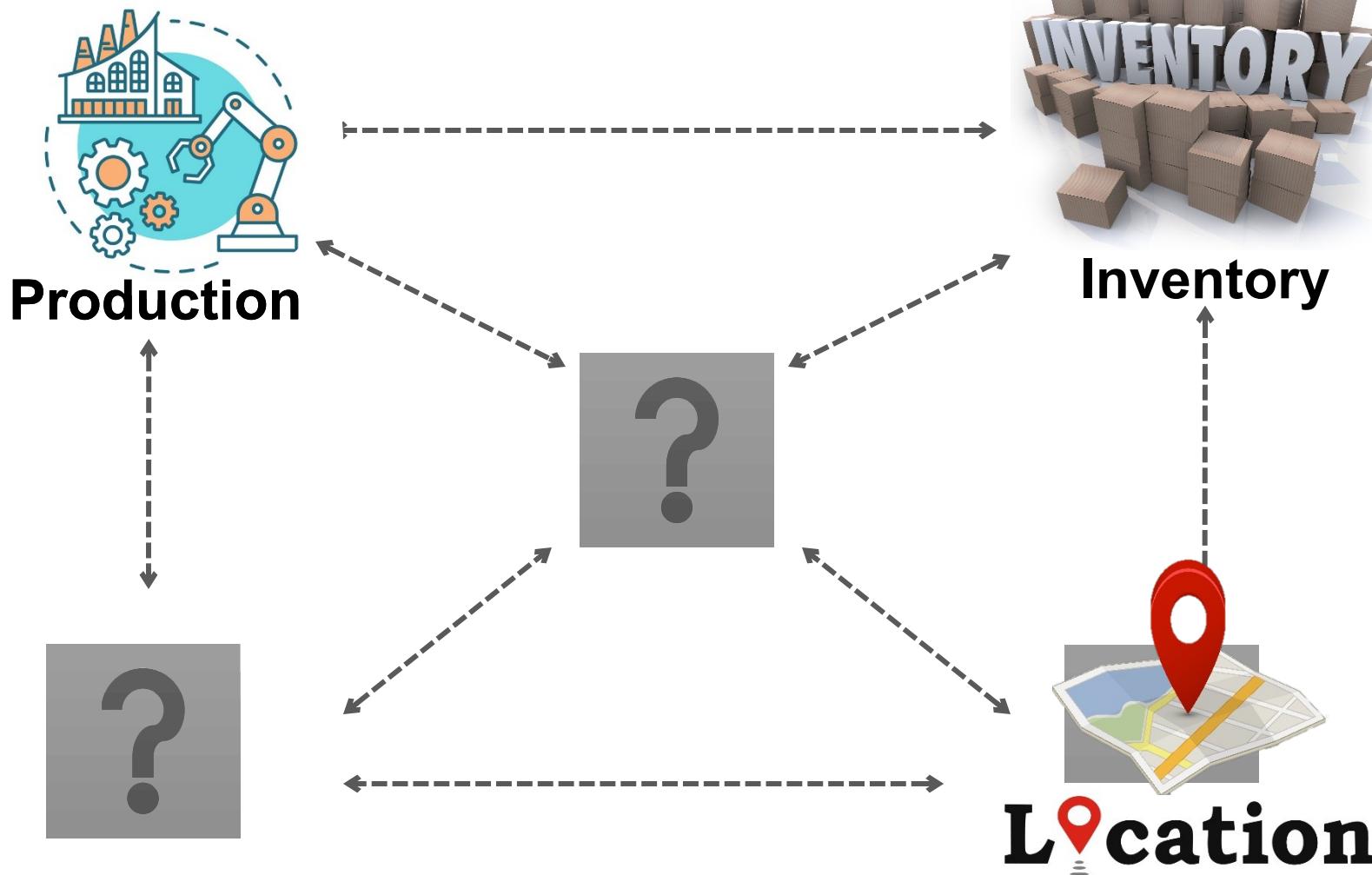
Supply Chain Drivers

Inventory
How much to make
and how much to store



- ✓ Inventory is spread throughout the supply chain.
- ✓ To achieve high levels of efficiency, the cost of inventory should be kept as low as possible.

Supply Chain Drivers



Supply Chain Drivers

Location

Where best to do what activity



- ✓ Location refers to the geographical sitting of supply chain facilities.
- ✓ The responsiveness versus efficiency trade-off :
- ✓ Centralize activities in fewer locations to gain **economies of scale** & efficiency.
- ✓ Decentralize activities in many locations close to customers and suppliers in order for operations to be more responsive.

Supply Chain Drivers

Location

Where best to do what activity



Factors to be considered:

- ✓ Cost of facilities.
- ✓ Cost of labor.
- ✓ Skills available in the workforce.
- ✓ Infrastructure conditions.
- ✓ Taxes and tariffs.
- ✓ Proximity to suppliers and customers.

Supply Chain Drivers



Production



Inventory



Transportation



Location

Supply Chain Drivers

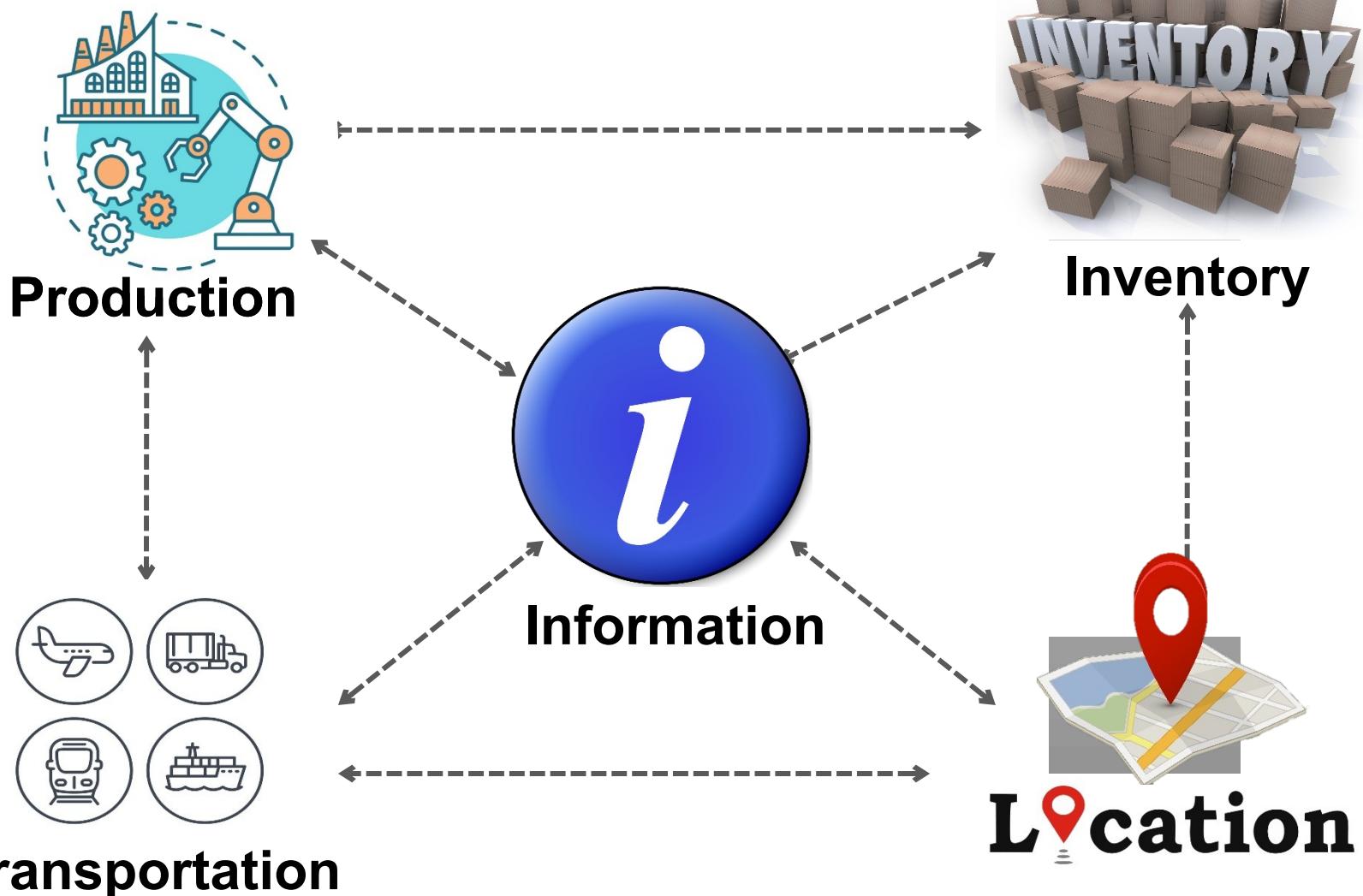
Transportation

How and when to move product



- The movement of everything from raw material to finished goods between different facilities in a supply chain.
- There are six basic modes of transport that a company can choose from:
 1. Ship
 2. Rails
 3. Pipelines
 4. Trucks
 5. Airplanes
 6. Electronic Transport

Supply Chain Drivers



Supply Chain Drivers

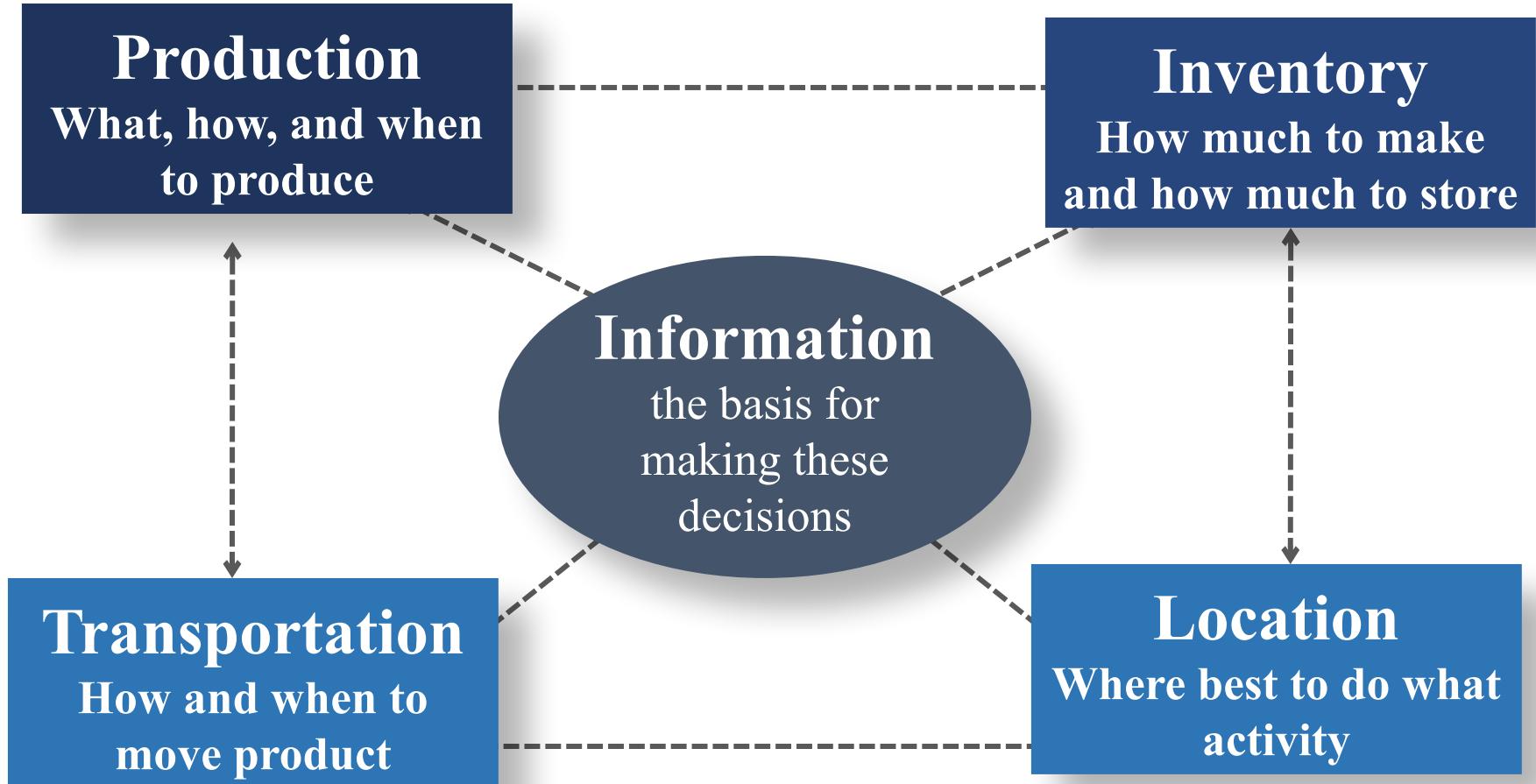


Information

the basis for making
these decisions

- ✓ The basis upon which to make decisions regarding the other four supply chain drivers.
- ✓ The connection between all of the activities and operations in a supply chain.
- ✓ Information is used for two purposes in any supply chain:
 1. **Coordinating** daily activities related to the other four supply chain drivers: production; inventory; location; and transportation.
 2. **Forecasting** and planning to anticipate and meet future demands.

Supply Chain Drivers



Activity

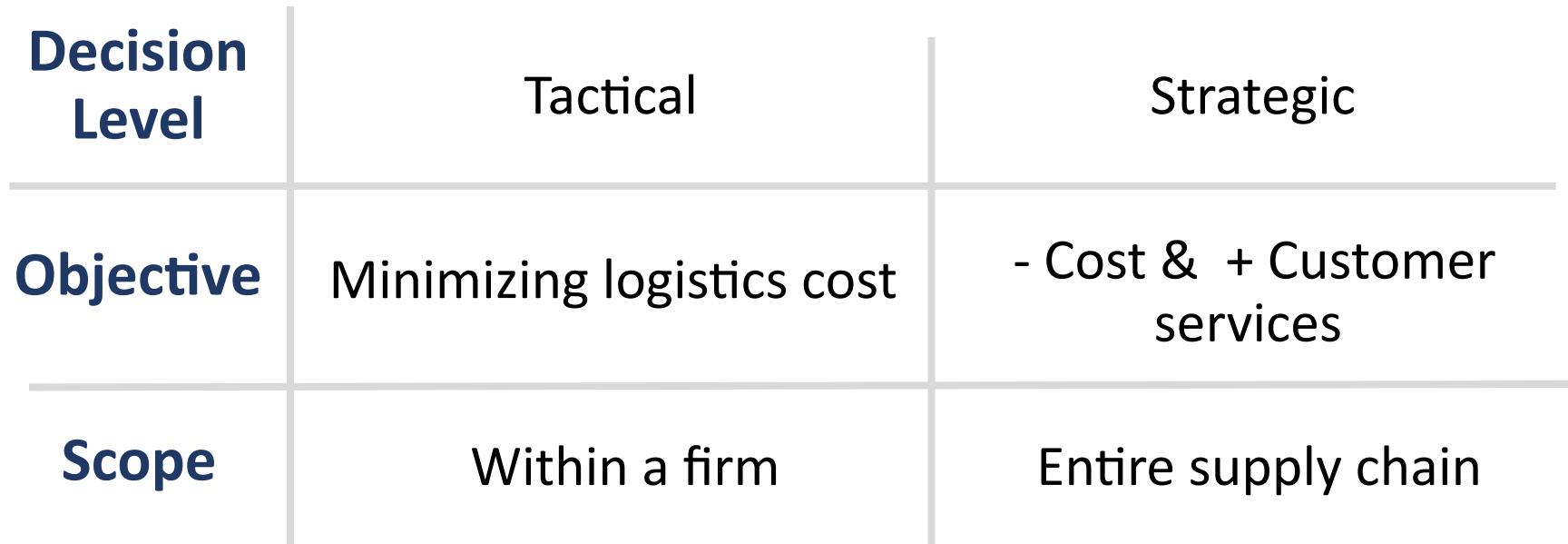


Instructions:

1. Trainees are to be divided into 3 groups.
2. Each group will choose a company and design its supply chain .
3. Each group will present the category they worked on with examples.
4. Duration: 5 minutes for preparation.
2 minutes for presentation for each group

SCM vs. Logistics

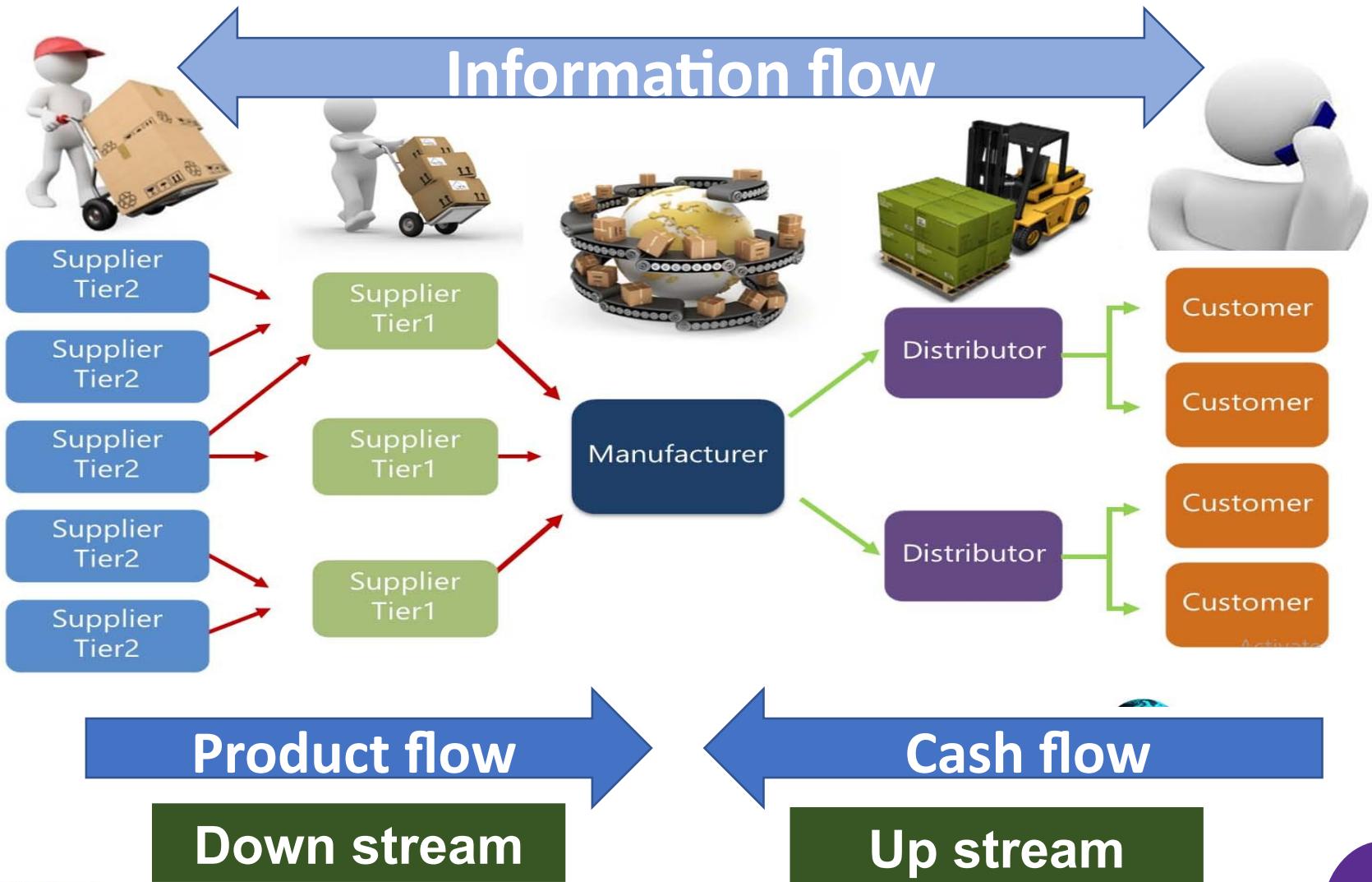
Both are concerned with **efficient** and **effective** management of physical flows, and matching supply & demand



Logistics

SCM

The Supply Chain Flow





**Down
Stream**



**Up
Stream**



Down Stream

- Supplier management
- Procurement
- Transportation
- Reliable supply of input materials.

- Order management
- Warehousing transportation
- Timely product delivery
- Customer satisfaction



Up Stream

There are 3 kinds of Flows in a supply Chain: Material, Information and Cash



Down Stream

- **Material:**
Product, Parts
- **Information:**
Capacity, Delivery Schedules
- **Cash:**
Finance, Invoices, Credit Teams

- **Material:**
Returns, repairs, after-sale services
- **Information:**
Orders, point-of-sale Data
- **Cash:**
Payments



The Supply Chain Process



How does supply chain management work?

The Supply Chain Process

1. Planning

- This stage mainly focuses on designing a strategy that yields maximum profit.
- Its aim is to set a strategy to manage all the resources required for designing products and providing services.
- It focuses on developing a set of metrics.



The Supply Chain Process

2. Sourcing (Developing)



- It mainly concentrates on building a strong relationship with suppliers of the raw materials required for production.
- Prices, delivery and payment processes with suppliers are set and the metrics for controlling and improving the relationships are created.
- Goods and services inventory systems are set in this stage.

The Supply Chain Process

3. Manufacturing (Making)



- In this stage, the products are designed, produced, tested, packaged, and synchronized for delivery.
- The task 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 test the quality levels, production output and worker productivity.

The Supply Chain Process

4. Deliver

- Here the products are delivered to the customer at the destined location by the supplier.
- In this stage 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.



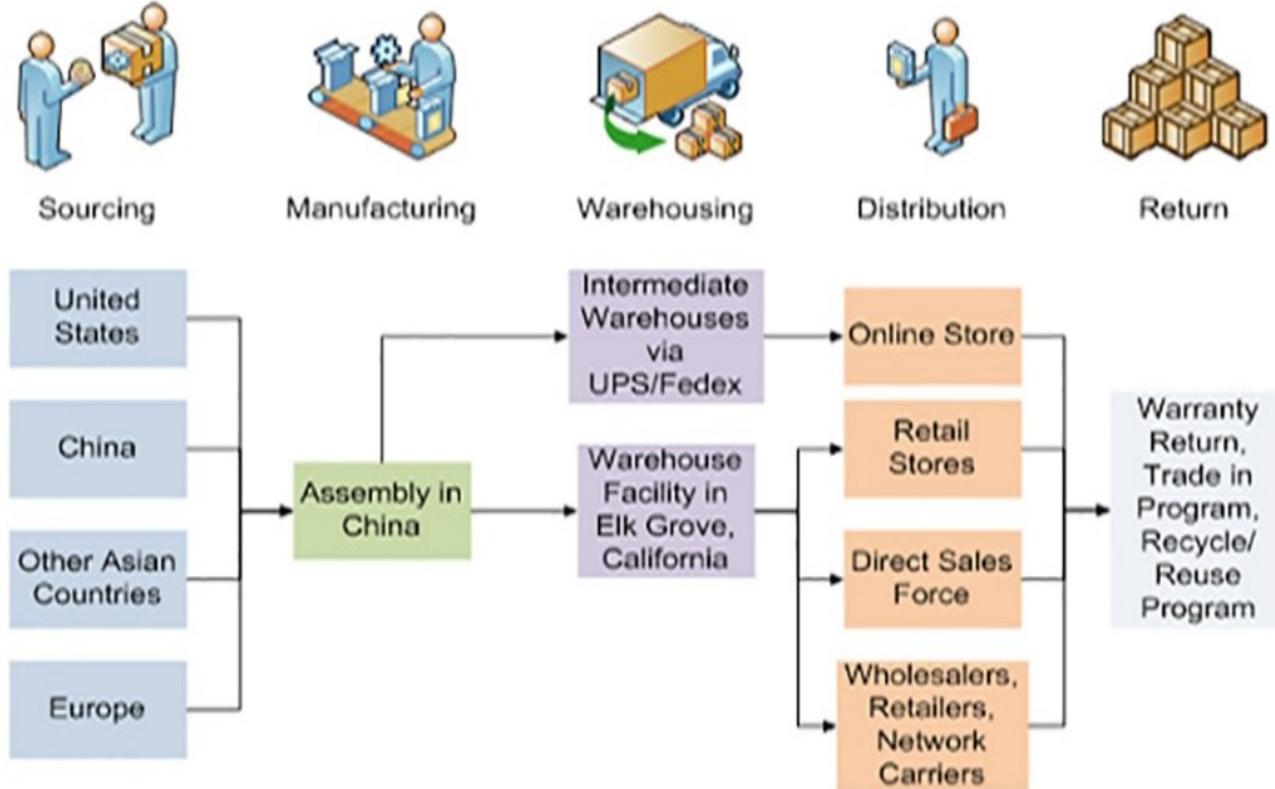
The Supply Chain Process



5. Return

- In the stage, defective or damaged goods are returned to the supplier by the customer. It tends to be a problematic section of the supply chain for many companies.
- The planners of supply chain need to discover a responsive and flexible network for accepting damaged, defective and extra products back from their customers and facilitating the return process for customers who have issues with delivered products.

Example of supply chain



Process view of supply chain

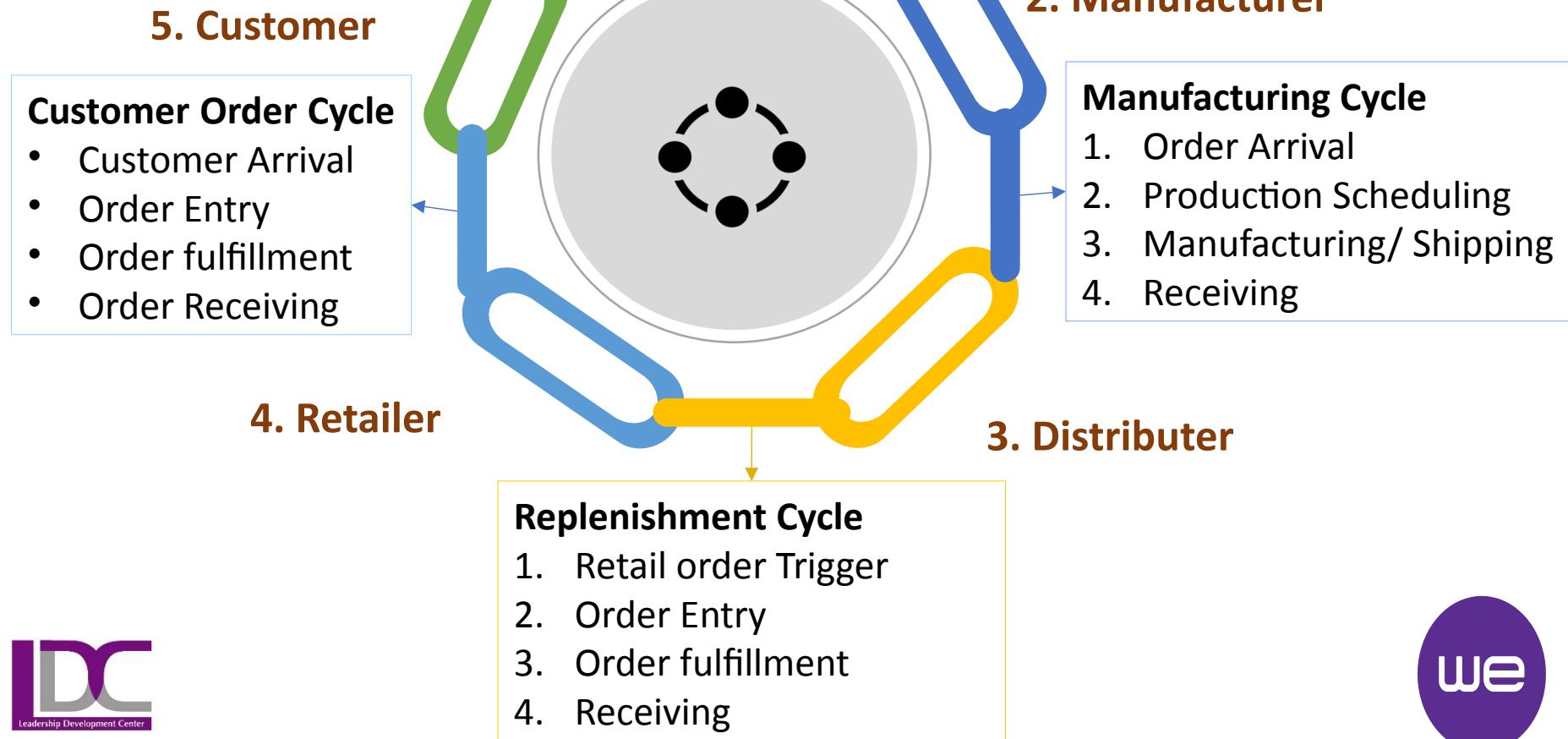
There are 2 different view to the process performed in a supply chain

- Cycle View
- Push / Pull View

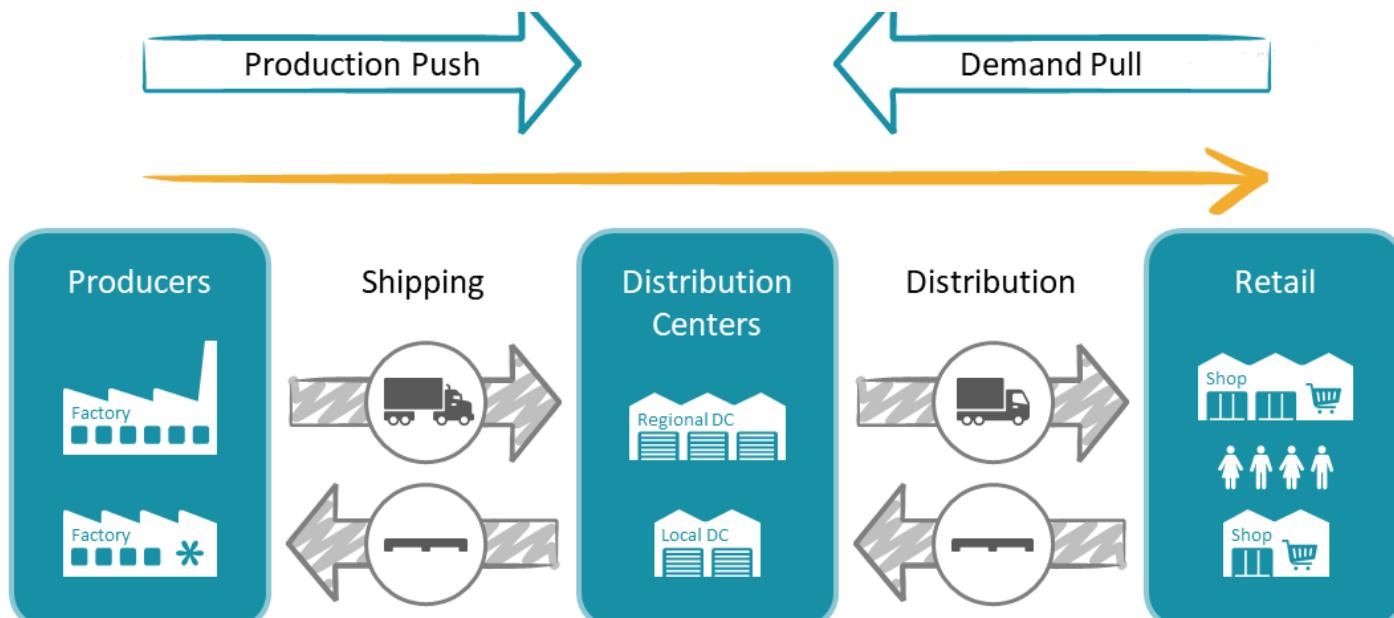


1. Cycle view

Here, the transition between each stage is known as a cycle.



2. Push/Pull View of supply chain



In a Push supply chain strategy:

The order is executed according to the anticipation of the orders of the customers.

In the Pull supply chain strategy:

the order is implemented according to the demand of the customers.

Decisions Phases in a Supply Chain

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.



Decisions Phases in a Supply Chain



- Long term decisions at the structure of the supply chain and what process each stage will perform
- It includes:
 - ✓ Location & capacities of facilities
 - ✓ Kind of product to be made or stored at various location
 - ✓ Modes of transportation
 - ✓ Information system
 - ✓ Sourcing /collaborations

Decisions Phases in a Supply Chain



- In the planning phase, companies must include uncertainty in demand, exchange rates, and competition.
- It includes:
 - ✓ Forecasting Demand
 - ✓ Which market will be supplied from which locations
 - ✓ Planning build up of inventories (location)
 - ✓ Inventory policies
 - ✓ Timing & size of market promotion

Decisions Phases in a Supply Chain



- Decision regarding individual customer order
- It includes:
 - ✓ Allocating inventory or production to individual's order
 - ✓ Setting a date that an order is to be filled
 - ✓ Allocating an order to a particular shipping mode
 - ✓ Setting delivery schedules of trucks
 - ✓ Placing replenishment orders

SCM - Performance Measures

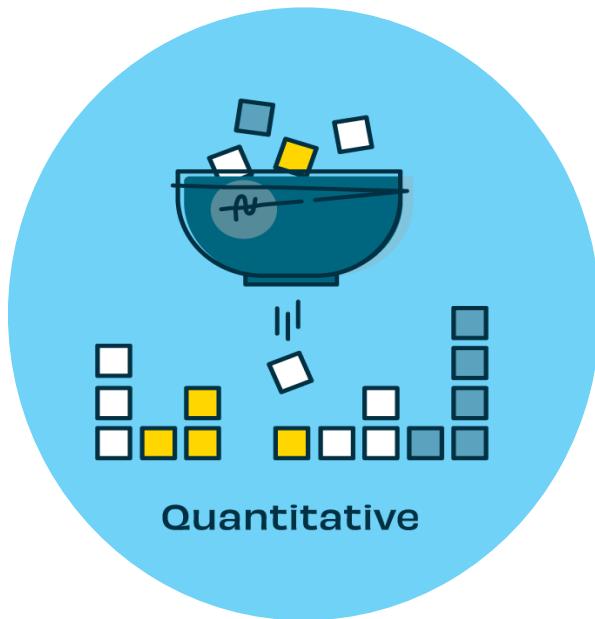


SCM - Performance Measures



- Customer Satisfaction
- Product Quality

SCM - Performance Measures



- Non-financial Measures
- Financial Measures

SCM - Performance Measures



- **Non-financial Measures:**

- ✓ **Cycle- time (lead-time):**

- SC Lead-time – order-to-delivery

- ✓ **Customer Service level:**

- Order Fill Rate – Stockout Rate – Back Order Level

- ✓ **Inventory Level:**

- Raw Material – Work-in-Process – Finished goods – Spare Parts

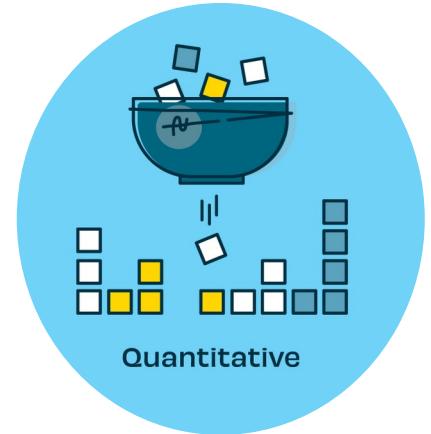
- ✓ **Resources Utilization:**

- Manufacturing – Storage – Logistics – Human – Financial)

SCM Measures

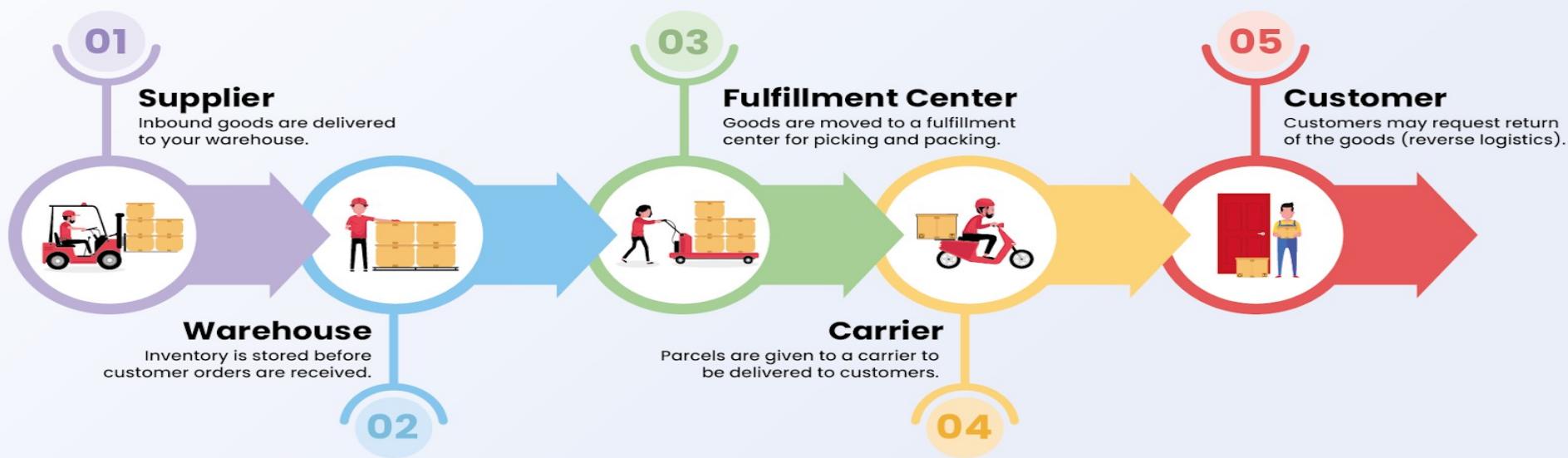
- **Financial Measures**

- ✓ Inventory holding costs.
- ✓ Transportation costs.
- ✓ Cost of raw materials and revenue from goods sold.
- ✓ Activity-based costs like the material handling, manufacturing, assembling rates etc.
- ✓ Cost of expired perishable goods.
- ✓ Penalties for incorrectly filled or late orders delivered to customers.
- ✓ Cost of goods returned by customers.
- ✓ Credits for goods returned to suppliers.



E-commerce Supply Chain

Digital supply chains are dynamic and able to adapt quickly to changing circumstances. They function in real-time and are highly agile “value networks” with integrated systems and processes.



- **Walmart**



CREATED USING
PopToon

Green Supply Chain Management

- ✓ (GSCM) refers to the concept of integrating sustainable environmental processes into the traditional supply chain to reduce total environmental impact.
- ✓ A much greater degree of collaboration, transparency and integration of supply chain processes and systems is required for the initiative to be effective
- ✓ .

THANK YOU