UNIT-III

- **Logistics and Supply chain relationships:** Benchmarking the logistics process and SCM operations –Mapping the supply chain processes – Supplier and distributor benchmarking–identifying logistics performance indicators – Channel structure.

# **Logistics and Supply chain relationships**

- Today's commercial world is very different. Customers and investors look for focus. They expect businesses to concentrate upon what they do best.

- Non core activities are outsourced.

- Firms that spread themselves too thinly risk becoming '**Jack of all trades and master of none'.**

- Developing and Managing Logistical and Supply chain relationships necessitates the study and understanding of the four important areas which are as follows:

- Channel Structure

- Economics of Distribution

- Channel Relationships and

- Logistical Service Alliance

Channel Structure
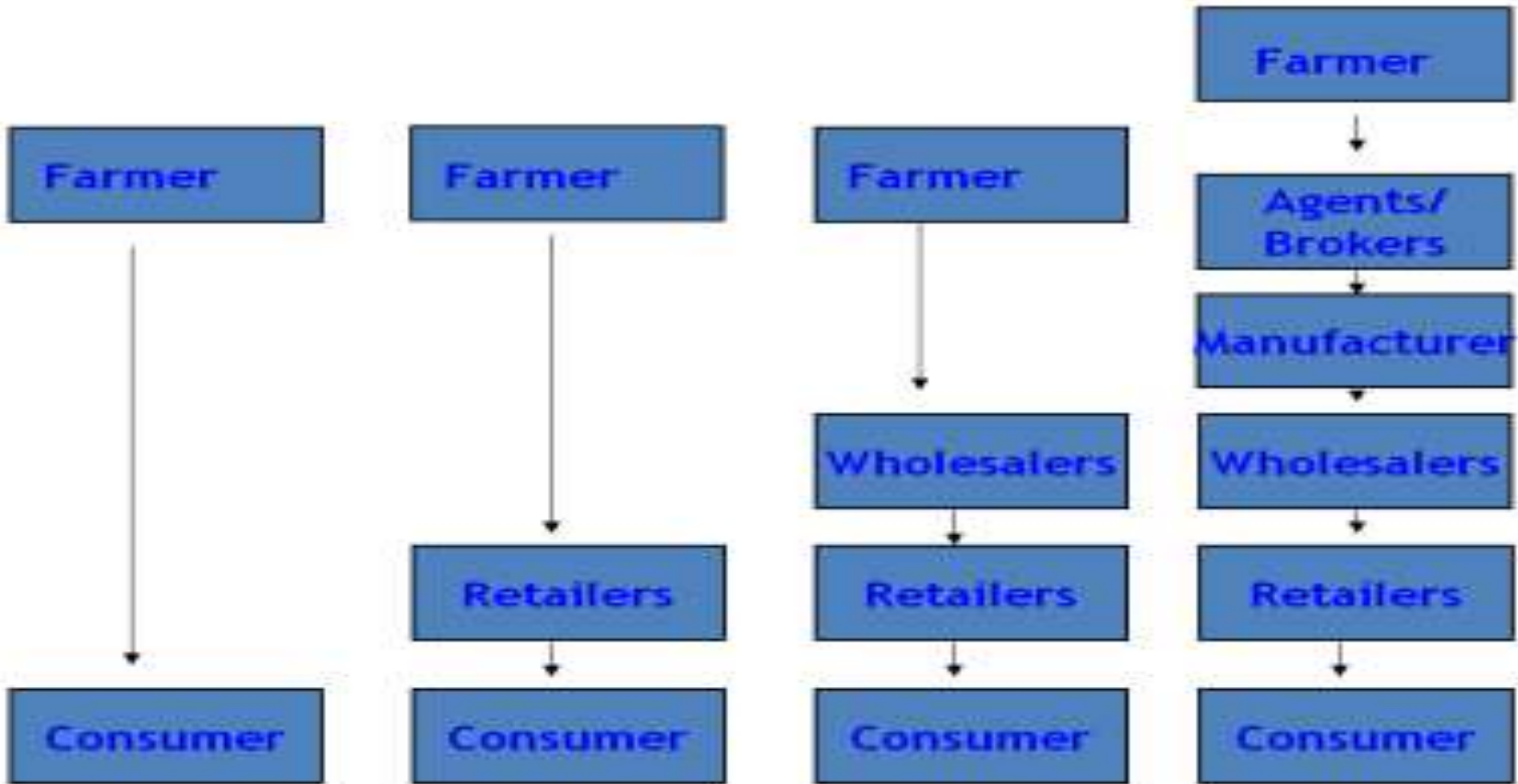
Economics of Distribution

- The foundation for developing a successful channel arrangements rests in fully understanding the underlying economics of distribution.

Primary Participants	
Manufacturers(industrial, Consumer)	Wholesalers (Merchant Wholesalers, Agents)
Agriculture	
Mining	
Specialized Participants	
Functional Specialists	**Support Specialists**
Transportation	Financial
Warehousing	Informational
Assembly	Advertising
Fulfilment	Insurance
Sequencing	Advisory/research
Merchandising	Arrangers

Channel Relationships

- Today, companies establish strategic relationship with various organizations such as suppliers, marketing intermediaries, consumers and transporter's etc., in order to have over all competitive advantage in terms of technology, costs, marketing and long-run performance of the business.

- **Dimensions in Channel Relationship**:
  - Supply chain Competitiveness
  - Risk, Power and Leadership
  - Elements of Success

Logistics Service Alliances

- Four attributes of logistical operations are essential to build strong working relationships
- Mutual dependency
- Core Specialization
- Power Clarity
- Co-operation Emphasis
- Example: **Starbucks allied with Pepsi in order to distribute its ready-to-drink beverages to gas stations, groceries, and convenience stores.**

THE PARTNERSHIP NO ONE KNEW ABOUT

- **Benchmarking.**
- **What is benchmarking?**
  On-going process of measuring products, services, practices & processes against the best that can be identified in order to:
  - Learn about & improve best practice.
  - Achieve realistic targets.
  - Integrate improvements into company strategy.
  - Use best practice as inspiration for innovation.
  - Be externally focused.
  - Be purposeful about improvement.
  - Measure improvement.

Benchmarking : A control process.

- Involving employees in the process of evaluation and change.

- Philosophy one of self control rather than imposed control, where the person most closely associated with the task is involved in the cross measurement and assessment of practice.

- Places personnel in a position where their unquestioned beliefs (paradigm) may be challenged , creating opportunities for innovation and learning.

Benchmarking the Supply Chain

- **What to Benchmark?**
  - Supply Chain Council suggests: SCOR (Supply Chain operations reference) Christopher, M pp 106)
  - Plan, Source, Make & Deliver.
  - SCOR is designed to provide a common framework to facilitate cross organisational benchmarking.

- **Who to Benchmark with?**
  - Competitors
  - Significant opportunities for firms in non competing industries

Benchmarking Logistics Processes

- One method to measure and compare the output. A form of reactive control.

- Alternative to concentrate on the processes which requires a number of steps:
  - Understand the process.
  - Use those most closely involved and develop flowcharts
  - Identify critical points

# Key Steps in the Benchmarking Logistics Processes

- Understand the structure of the process, i.e., process mapping, process analysis, flow charts

- Identify the critical processing steps, i.e., process bottlenecks, critical path

- Benchmark those critical processing steps against 'best in class'

- Measure performance at supplier/customer interface

- Derive the most effective processes and adopt the best control and measurement tools

Understand the Process
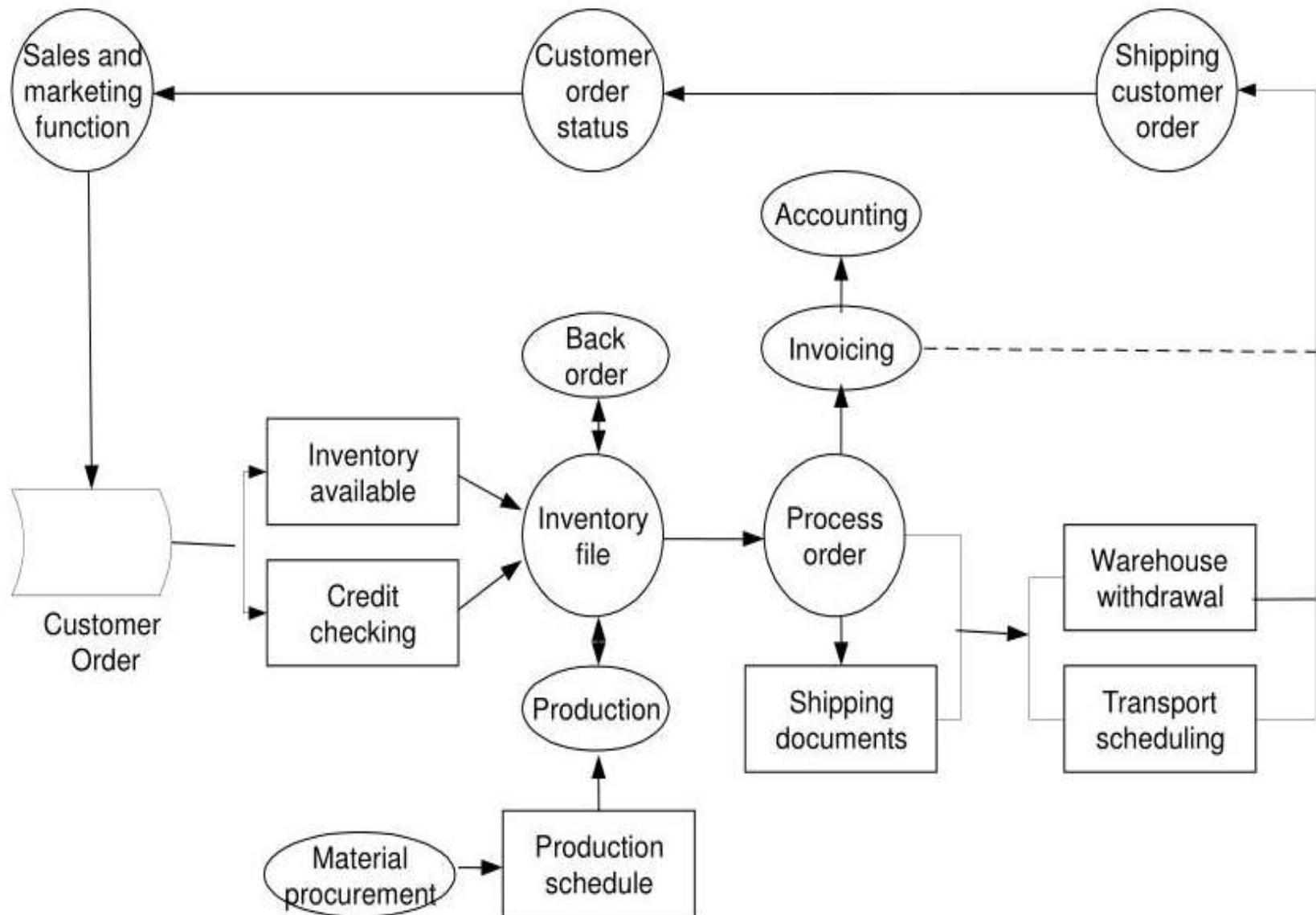
Identify Critical Points
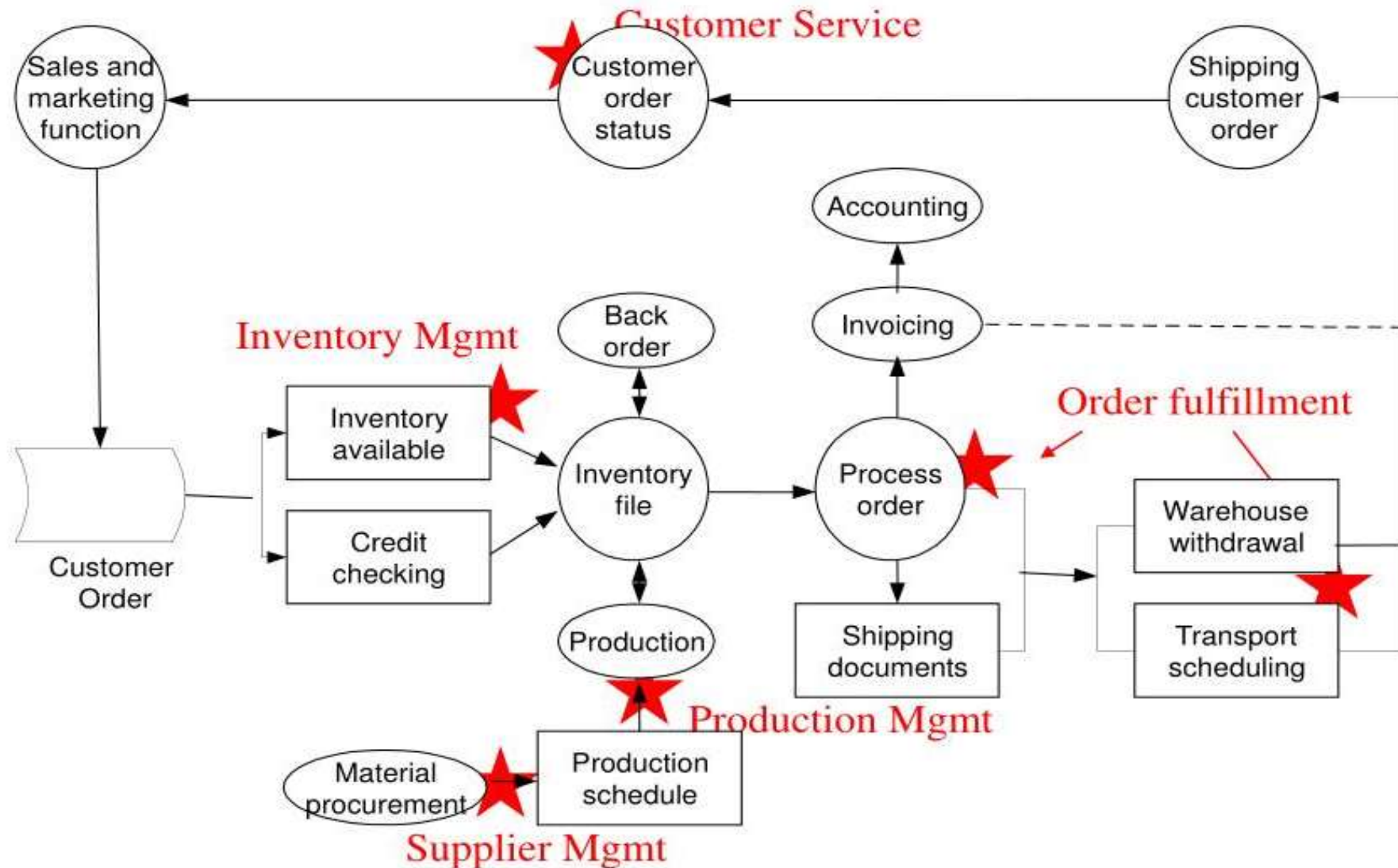
Supply Chain Map

- A time-based representation of the processes and activities involved as the materials/products move through the supply chain.
- Horizontal time – time spent in process (manufacturing, transit, assembly/packaging, etc.)
  - **Time required for system to respond to increase in demand**
- Vertical time – time spent by product/WIP standing as inventory
  - **(Horizontal + vertical time) = time required to 'drain' system of inventory**
- Multi-component products – total pipeline determined by the slowest moving item

Pipeline Mapping
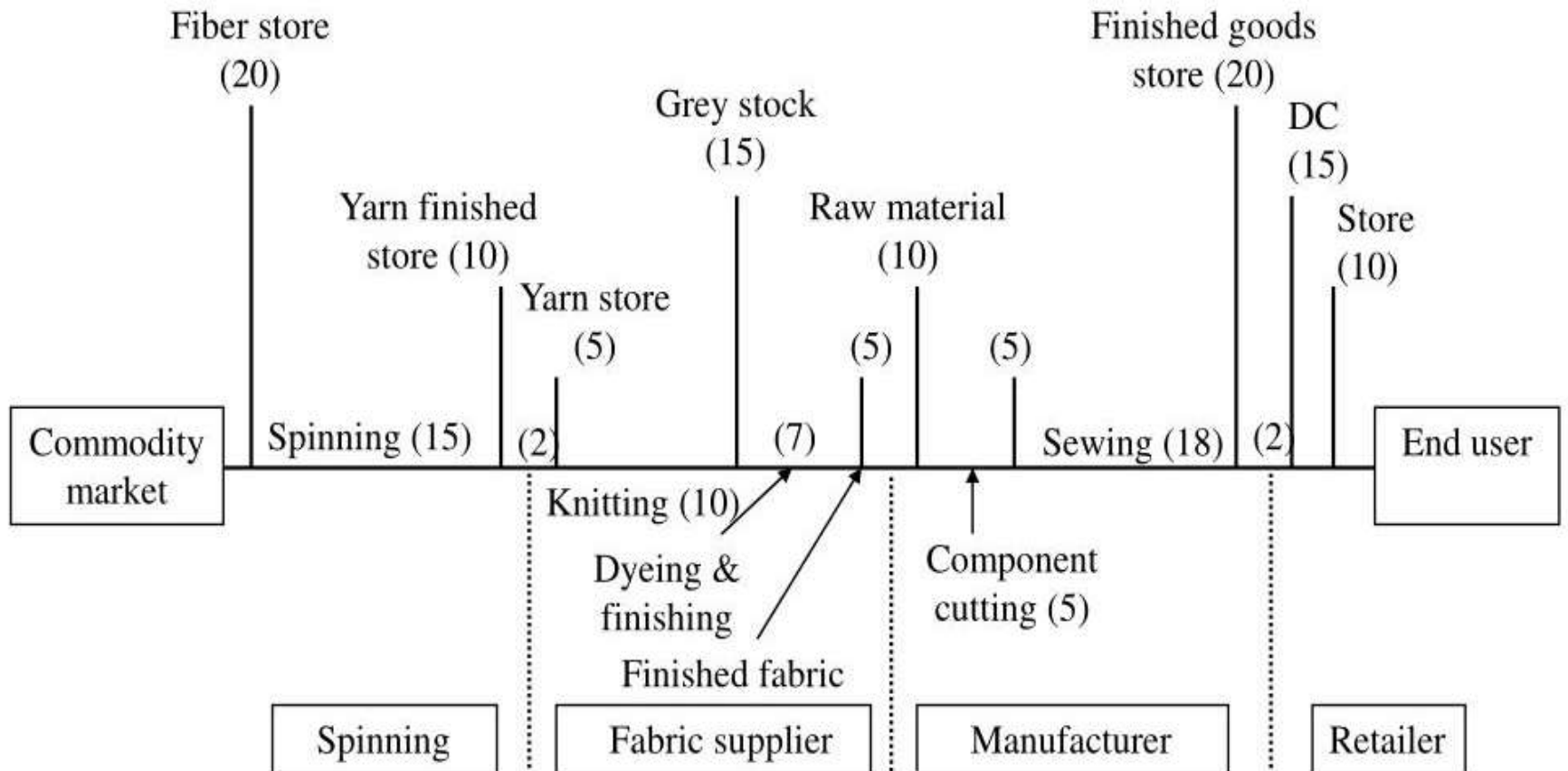
How to use Supply chain Mapping

- It provides a powerful basis for logistics reengineering projects
- It makes the total process and its associated inventory transparent
- It measures product or service supply chain efficiency (i.e., value-added vs. non-value-added time)
- It highlights the consequences of some 'rules' and 'policies' the company is imposing (or has inherited) in the areas of inventory, purchasing, production planning, and vendor management

Supplier and Distributor Benchmarking

- In reviewing supplier and distributor relationship and benchmark it against the 'best in class', the emphasis should be on assessing their contribution to overall supply chain performance (efficiency and effectiveness). Some of the key issues are:
  - willingness to work as a partner / co-maker
  - commitment to continuous improvement
  - acceptance of innovation and change
  - focus on throughput time reduction
  - utilization of quality management procedures
  - use regular and formal benchmarking processes themselves
  - do they seek to improve communication with you?
  - are they flexible? Customer-focused?

Supplier and Distributor Benchmarking
Some Typical Measures
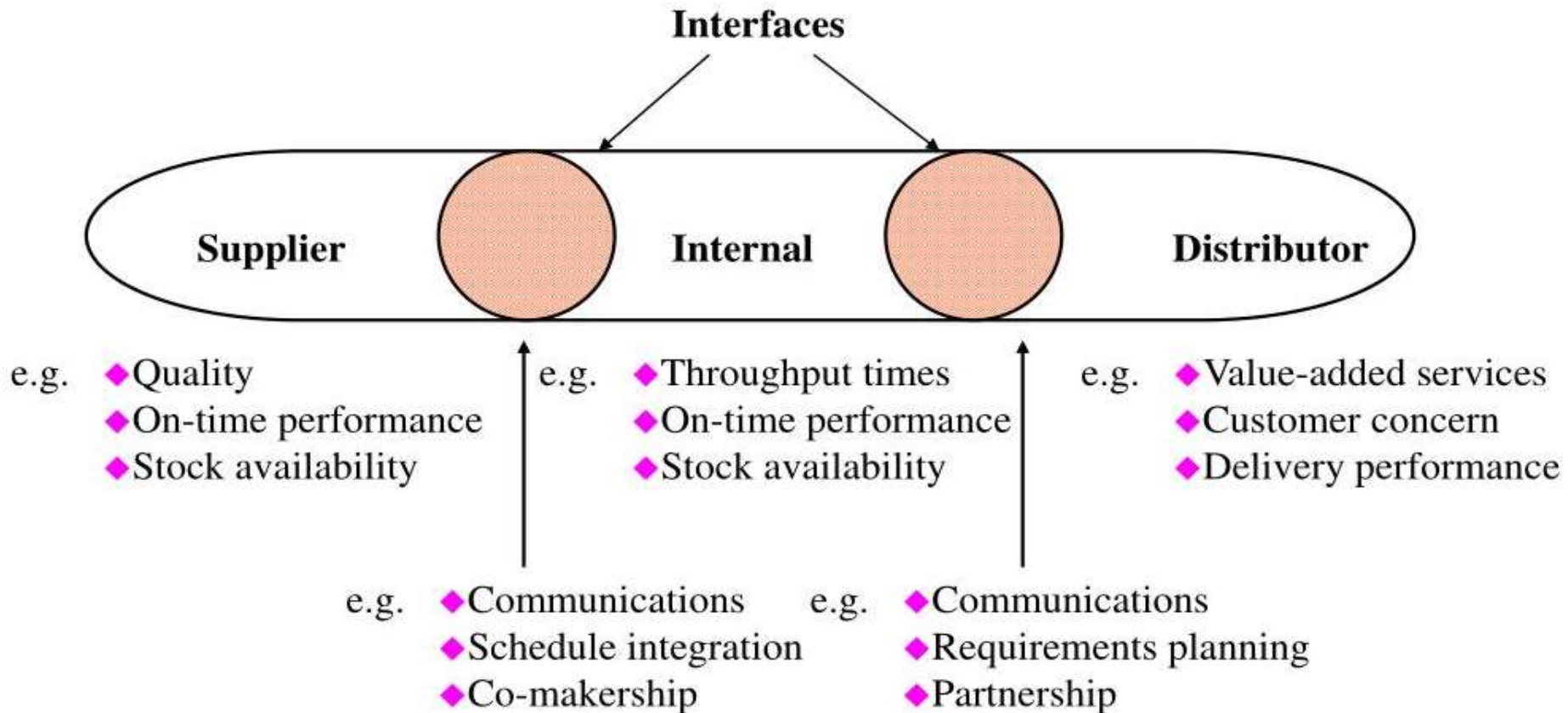
Identifying Logistics Performance Indicators

- Businesses use logistics KPIs to identify stages in the flow of goods that need improvement.

- The relative importance of logistics KPIs vary by industry.

- Determine business's standing in its sector and choose KPIs that are representative of it.

- Break KPIs out by their stage within the supply chain.

- Pick a few KPIs in each stage that target the company's position in the industry and potential for improvement.

KPIs for Each Stage of Logistics

Logistics KPIs

Order Management
- Shipping Time
- Order Accuracy
- Perfect Order
- Number of Shipments
- Number of Shipments

Supply
- Lead Time
- Capacity Utilization
- Productivity

Inventory
- Customer Backorder Rate
- Inventory Accuracy
- Inventory Turnover
- Inventory to Sales Ratio

Distribution
- Trailer Utilization Rate
- Warehousing Costs
- Average Dwell Time

Transport Management
- Delivery Time
- Average Days Late
- Truck Turning
- Freight Payment Accuracy
- Transportation Costs

1. Order management

- **Order Management KPIs**

- Order management KPIs focus on orders and returns processing, which are crucial for reverse logistics. These metrics start when customers place an order.

- high order accuracy, companies can suffer from slowdowns in production or sales, costing time and money.

- **Perfect Order:** Perfect order, also known as perfect customer order rate, is a KPI that measures how many orders ship without issues (damage, delays or inaccuracies). This metric is another KPI that targets customer satisfaction.

- **On-Time In-Full:** On-time in-full represents how many shipments are delivered according to the quantity and schedule specified when they were ordered. This is typically regarded as a customer-centric metric since it measures how often a customer gets what they ordered at the time it was promised.

- **Number of Shipments**: The number of shipments is how many loads company sent out in a given period. Looking at the averages of this KPI helps companies optimize their resources and hit their financial goals.

- **Shipping Time:** Shipping time is the length of time it takes for companies to ship an order on or before the requested date. This metric is vital to customer satisfaction. Organizations often couple it with the on-time shipping KPI.

- **Order Accuracy:** Order accuracy is the measure of inventory on-hand and order pick accuracy. Without

2. Supply KPIs

- Supply KPIs are metrics that focus on how well final goods are moving through the supply chain. Use these measurements to help improve the efficiency of operations and grow business. They are also useful for developing acceptable practices and relationships with other supply chain partners. Learn more about supply chain management.

- **Lead Time:** Lead time, also known as order cycle time, is a measure of the time between when a customer places an order and when they receive it. This metric is vital for identifying possible bottlenecks.

- **Capacity Utilization:** Capacity utilization is how much of a resource a company is using. This resource can be the production of goods or professional services. This metric is essential for maintenance management and resource tracking.

- **Productivity:** Productivity is a measure of how well a company's machines, departments and/or people are running. Measuring and understanding productivity helps businesses ensure they can deliver on their promises.

3. Inventory KPIs

- Inventory KPIs can help measure the effectiveness of inventory purchasing and production processes, and may also focus on cash flow and productivity. Read the guide to inventory KPIs and metrics to learn more.

- **Customer Backorder Rate:** Customer backorder rate is how often a company cannot fulfill an order. This metric directly contributes to customer satisfaction.

- **Inventory Accuracy:** Inventory accuracy measures how closely inventory records reflect what is actually in storage. This metric is vital for knowing what company has in stock and forecasting inventory purchases.

- **Inventory Turnover:** Inventory turnover, also known as stock rotation, is the measure of how many times in a period a company sells all its stock of a certain product. Inventory turnover is important to retail success and keeping the company competitive. For more on inventory turnover, read the inventory turnover primer.

- **Inventory to Sales Ratio:** The inventory to sales ratio measures the amount of inventory in stock versus the number of fulfilled sales. As inventory is often a company's biggest expense, businesses that can keep their inventory expenses low relative to their sales save money overall.

4. Distribution KPIs

- **Distribution KPIs**
- Distribution KPIs focus on the system that manages product flow—moving a product to customers directly or from from distributors.
- **Trailer Utilization Rate:** Trailer utilization rate measures how well companies are loading their trailers. This rate reflects a company's load planning and whether it is minimizing costs there as much as possible.
- **Warehousing Costs:** Warehousing costs are a group of metrics that cover the expenses specific to warehouse. These can include any equipment, energy, labor, delivery and shipping costs that get goods into and out of the warehouse. Use this KPI to measure how efficient warehouse operations are. Read the warehouse management system (WMS) guide to learn how it can improve costs.
- **Average Dwell Time:** Average dwell time, also known as wait time, is the length of time a carrier sits before processing for pickup and delivery. This metric indicates how well a facility functions. Shippers with low average dwell times will struggle to attract drivers and pay more in securing services.

5. Transport Management KPIs

- Transport management KPIs govern the trucking of goods and can help improve operations. These metrics differ based on what entity needs the information. Because they affect the economy, federal agencies may also request these numbers.

- **Delivery Time:** Delivery time, also called on-time delivery, measures how quickly an order arrives in full. The time is for the entire order, not just parts. This metric impacts customer satisfaction and loyalty.

- **Average Days Late:** Average days late is the number of days between the delivery's due date and when the customer receives the order. This metric provides insight into the delivery process and also directly impacts customer satisfaction and loyalty.

- **Truck Turning:** Truck turning, also known as truck turnaround rate, is the time between when a delivery truck enters a facility to collect or deliver goods and when it exits. The smaller the truck turning rates, the more time the truck is on the road. This rate shows how well a company handles loading and unloading.

- **Freight Payment Accuracy:** Freight payment accuracy, also called freight bill accuracy, is the number of error-free freight bills compared to the total number of freight bills in a period. Freight bills are quite error-prone, yet data errors are incredibly costly.

- **Transportation Costs:** Transportation costs are the group of metrics that track an order's price from beginning to end. This metric includes order processing, administration, inventory carrying costs, warehousing and transportation costs. Use these costs to see if transit operations are efficient.

Channel Structure

- A distribution channel is a path by which all goods and services travel to arrive at the intended consumer.

- Distribution channels can be short or long, and depend on the number of intermediaries required to deliver a product or service.

Components of a Channel

- Producer: Producers combine labor and capital to create goods and services for consumers.

- Agent: Agents commonly act on behalf of the producer to accept payments and transfer the title of the goods and services as it moves through distribution.

- Wholesaler: A person or company that sells large quantities of goods, often at low prices, to retailers.

- Retailer: A person or business that sells goods to the public in small quantities for immediate use or consumption.

- End Consumer: A person who buys a product or service.

Channel Structure

- The number of levels and companies involved in the flow of product from producer to end user.

- **A. Direct Channels**: Manufacturer → Customers
  - Provide full control over the execution of marketing strategy and a performance benchmark for direct channels
  - ❖ Company Sales Force
  - ❖ Company Website
  - ❖ Company owned retail stores

B. Indirect Channels: Rely on intermediaries

o Provide amount/ variety assortment for customers

o Provide service and other facilitating functions

o Communicate with end users
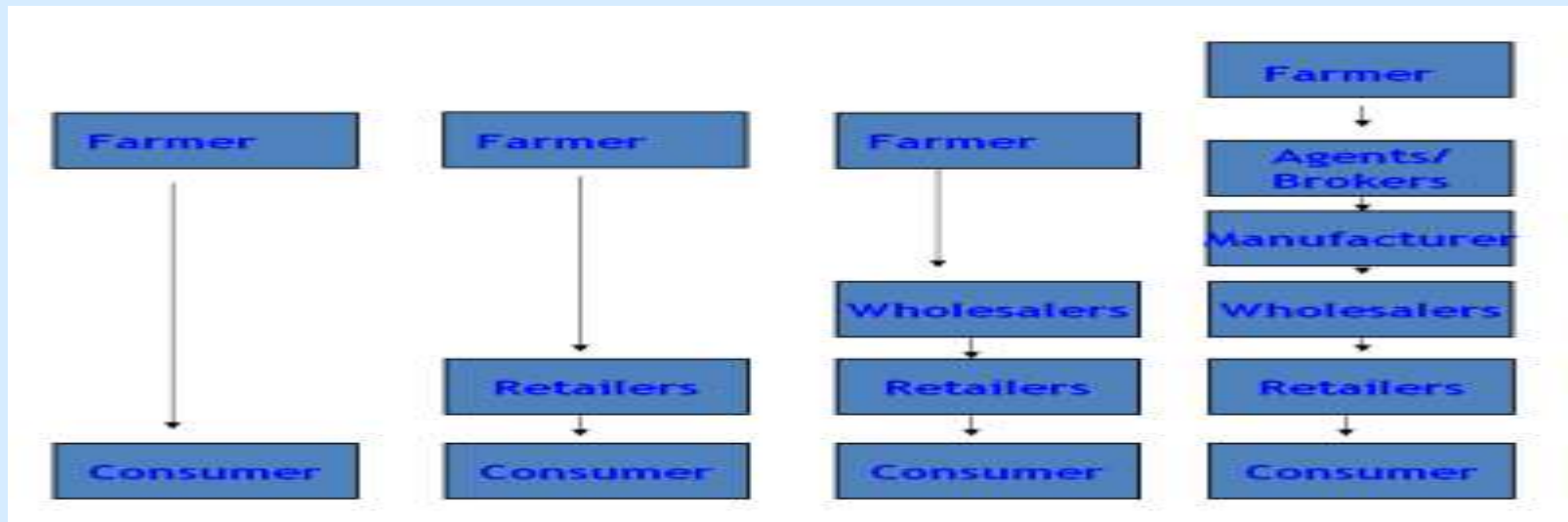
- **C. Hybrid, Dual or Concurrent Channels :** Combination of Direct and indirect channel structure