



Param Pujya Dr. Babasaheb Ambedkar Smarak Samiti's

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# Programme Educational Objectives

*Our program will create graduates who:*

- 1. Will be recognized as a creative and an enterprising team leader.*
- 2. Will be a flexible, adaptable and an ethical individual.*
- 3. Will have a holistic approach to problem solving in the dynamic business environment.*

# Logistics and Supply Chain Management

## Course Outcomes

- CO1-Given a business situation containing the data (material and information flow) from supplier to manufacturer to the retailer, the student manager will be able to identify and explain the best Supply Chain strategy from the five supply chain strategies.
- CO2-Given a particular type of product, its manufacturer and customer, the student manager will be able to select, construct and explain the appropriate distribution network design type.
- CO3-Supplier is not able to deliver the products to the manufacturer because of one of the reasons (such as exchange rates, reliability of transportation channels, transfer price, political stability, and natural calamity). Student manager will be able to explain different types of uncertainties its solutions.

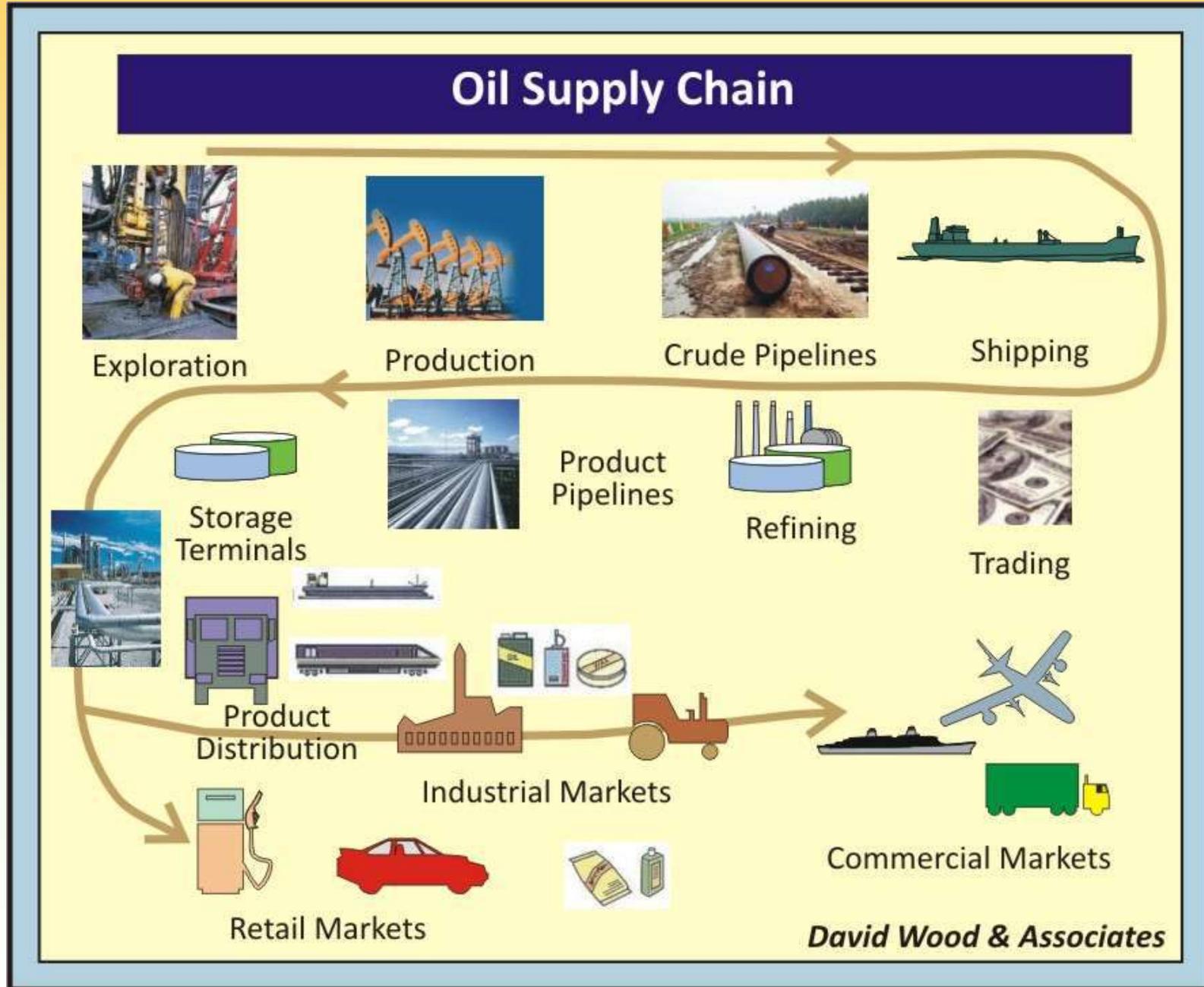
- CO4-Student manager will be able to explain all the modes of transportation and for given a situation, would be able to identify the appropriate mode of transportation.
- CO5-Student manager will be able to explain the role of technology in intermodal freight transportation and enlist and explain various technological tools, for intermodal freight security.



# **Unit I**

# **Understanding the Supply Chain**

# Example of Supply Chain



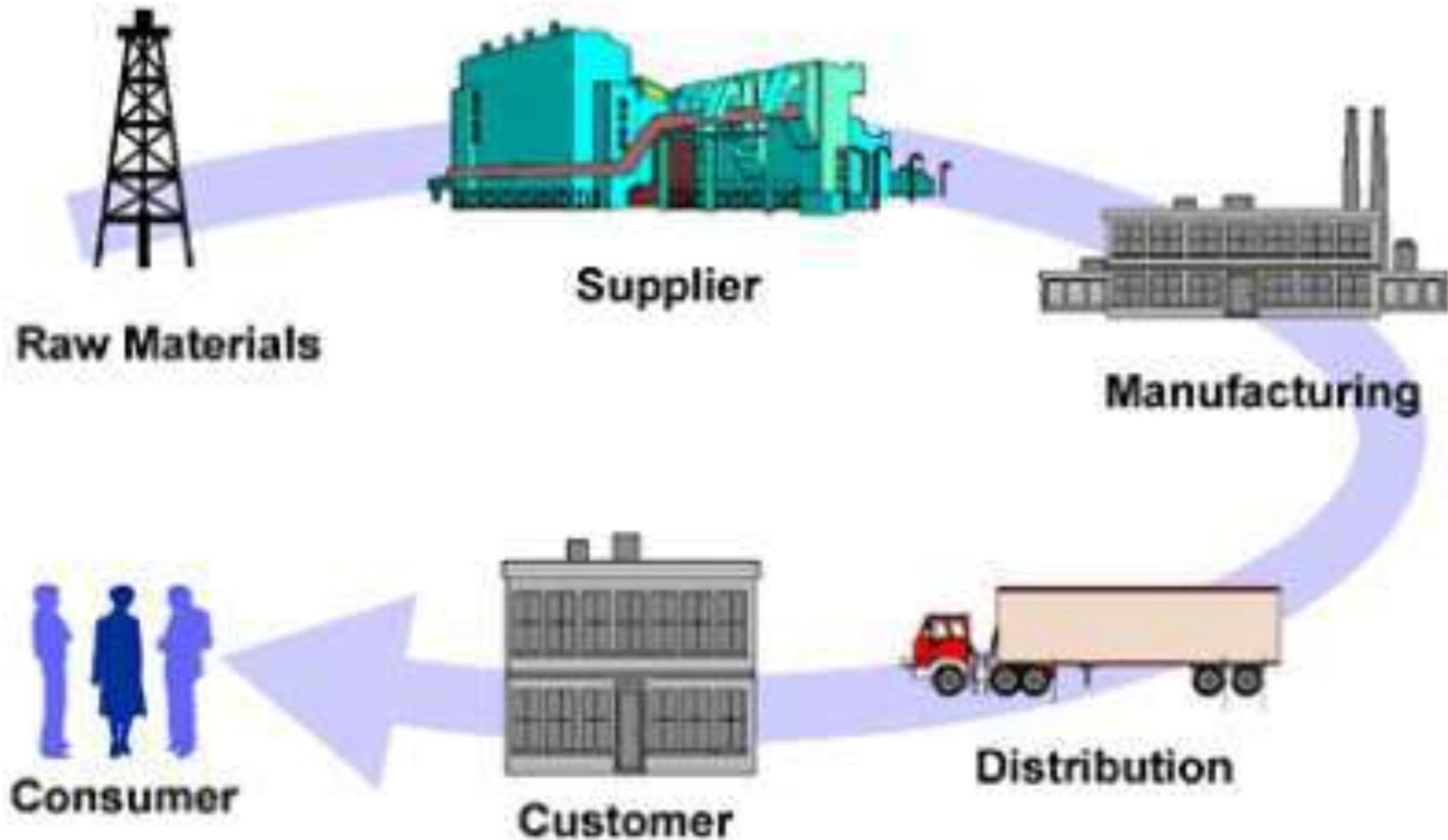
# What is Supply Chain

Definitions of a "supply chain" **virtually universally encompass the following three functions:**

- i. supply of materials to a manufacturer;
- ii. the manufacturing process; and,
- iii. the distribution of finished goods through a network of distributors and retailers to a final customer.

Companies involved in various stages of this process are linked to each other through a supply chain.

# Phases of Supply Chain



# Phases of Supply Chain

**Raw Material Suppliers:** A supplier plays a critical link in supply chain. Forming the right partnership with right terms and polices helps develop a good relationship with the suppliers that will prove beneficial to all the parties involved.

# Phases of Supply Chain

**Manufacturer:** After acquiring the right raw material, the organization has to make careful decision on the manufacturing of the product. The demand for the product, technologies required and other important decisions have to be carefully managed at this stage.

# Phases of Supply Chain

**Distributors:** The distributors could include wholesalers and retailers. They are one of the important links between the organization and customers.

**Customers:** They are the most important and also the end-link in the chain. An organization should identify their customers and make sure that the product they produce is what is required.

# Need of Supply Chain

Managing contractual obligations to assure a continuous supply and avoid a service company's delivery disruptions.

Strengthening supplier relations for systematic synergy with suppliers and different lines of business.

Enterprise spending management to assure procurement happens through the right suppliers and reduces costs.

Managing risk and compliance to abide by organizational as well as industry specific regulations and compliances.

Establishing a single comprehensive supplier view and deriving insightful procurement analytics

# Functions of Supply Chain

Defining business boundaries and relationships

Managing demand and supply

Logistics

Purchasing

Selling system interface

Manufacturing system interface

Product design interface

# What Are The Supply Chain Drivers?

The supply chain drivers are grouped under two main drivers:

1. logistics drivers
2. cross functional drivers

# LOGISTICS DRIVERS:

1. facilities -- warehouse or storage locations or factory location.
2. Inventory -- stock of raw materials or finished goods
3. transportation--- moving of goods from one place to another.

# CROSS FUNCTIONAL DRIVERS:

4. pricing - cost of goods

5. information --- information is nothing but the customer needs and wants

6. sourcing -- procuring raw materials for production activities.

# SUPPLY CHAIN DRIVERS

The four primary drivers of supply chain management

1. Facilities
2. Inventory
3. Transportation
4. Information

Organizations use these four drivers to support either a supply chain strategy focusing on efficiency or a supply chain strategy focusing on effectiveness

# **The Supply Chain's Strategic Importance**

**Supply chain management is the integration of the activities that procure materials and services, transform them into intermediate goods and final products, and deliver them through a distribution system**

**Competition is no longer between companies; it is between supply chains**

# Supply Chain Management

Important activities include determining

1. Transportation vendors
2. Credit and cash transfers
3. Suppliers
4. Distributors
5. Accounts payable and receivable
6. Warehousing and inventory
7. Order fulfillment
8. Sharing customer, forecasting, and production information

# How Supply Chain Decisions Impact Strategy

	<b>Low-Cost Strategy</b>	<b>Response Strategy</b>	<b>Differentiation Strategy</b>
<b>Supplier's goal</b>	Supply demand at lowest possible cost (e.g., Emerson Electric, Taco Bell)	Respond quickly to changing requirements and demand to minimize stockouts (e.g., Dell Computers)	Share market research; jointly develop products and options (e.g., Benetton)
<b>Primary selection criteria</b>	Select primarily for cost	Select primarily for capacity, speed, and flexibility	Select primarily for product development skills

# How Supply Chain Decisions Impact Strategy

	<b>Low-Cost Strategy</b>	<b>Response Strategy</b>	<b>Differentiation Strategy</b>
<b>Process characteristics</b>	<b>Maintain high average utilization</b>	<b>Invest in excess capacity and flexible processes</b>	<b>Modular processes that lend themselves to mass customization</b>
<b>Inventory characteristics</b>	<b>Minimize inventory throughout the chain to hold down cost</b>	<b>Develop responsive system with buffer stocks positioned to ensure supply</b>	<b>Minimize inventory in the chain to avoid obsolescence</b>

# How Supply Chain Decisions Impact Strategy

	<b>Low-Cost Strategy</b>	<b>Response Strategy</b>	<b>Differentiation Strategy</b>
<b>Lead-time characteristics</b>	<b>Shorten lead time as long as it does not increase costs</b>	<b>Invest aggressively to reduce production lead time</b>	<b>Invest aggressively to reduce development lead time</b>
<b>Product-design characteristics</b>	<b>Maximize performance and minimize costs</b>	<b>Use product designs that lead to low setup time and rapid production ramp-up</b>	<b>Use modular design to postpone product differentiation as long as possible</b>

# Strategic, Tactical, and Operational Decision Making

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<i>Decision area</i>	<i>Strategic</i>	<i>Tactical</i>	<i>Operational</i>
<b>Transportation</b>	Mode selection	Seasonal equipment leasing	Dispatching
<b>Inventories</b>	Location, Control policies	Safety stock levels	Order filling
<b>Order processing</b>	Order entry, transmittal, and processing system design		Processing orders, Filling back orders
<b>Purchasing</b>	Development of supplier-buyer relations	Contracting, Forward buying	Expediting
<b>Warehousing</b>	Handling equipment selection, Layout design	Space utilization	Order picking and restocking
<b>Facility location</b>	Number, size, and location of warehouses		

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# Flows in Supply Chain Management

There are various expressions to define supply chain management.

The best one will be Supply Chain Management is a total systematic approach to manage flow of Information, material and money between Suppliers and Customers .

# Information Flow

Request for Quotation, Purchase order, Monthly schedules, Engineering Change Requests, Quality complaints, Reports on supplier performance flows from Customer side to Supplier.

From supplier side to Customer, it would be presentation of company, offer, confirmation of purchase order, reports on action taken on deviation, Dispatch details, Report on Inventory, Invoices etc.

## Contd....

If supply chain has to be successful, constant interaction has to happen between supplier and Customer.

In many cases, other partners like distributors, dealers, retailers, logistic service providers are involved in the information network.

Further to this, various departments at Supplier and Customers are in the Information loop.

Internal information flow within the Customer for in-house manufacture is separate.

# Material Flow

It moves typically from Supplier to Customer. It could be through various warehouses among distributors, dealers and retailers.

Challenge here is to ensure that material flows quickly without halting as inventory in various points in the chain.

## Contd....

Faster it moves, better it is for the company as it reduces cash cycle.

For repairs, exchange, at end of life material can also flow from Customer to Supplier.  
Finally, finished goods flow from Customer to their Customer through various agencies.

3PL in the process may be there in the picture. Not to forget here, internal flow within the Customer company.

# Money flow

Based on invoice raised by supplier, Customer does verification for correctness.

If that is correct, money will flow from Customer to Supplier. There could also be flow of money from Supplier to Customer as debit notes.

# "Strategic Fit

In a business scenario "strategic fit means aligning supply chain strategy with competitive strategy."



# Competitive strategy

Companies build a competitive strategy to target a set of customer segments and build strategies to satisfy needs and priorities of those customer segments.

Companies also study what competitors are doing and what changes they can offer to have a competitive advantage, like winning customers by offering a lower price on the product or by providing large varieties of the product or by providing better services.

Companies can achieve these strategies by ensuring that their supply chain capabilities are able to support these strategies.

# Demand Uncertainty

The customers of one segment tend to have more or less the same demand pattern, so to satisfy the uncertainty of demand for the target segments the supply chain has to build the strategy and capabilities accordingly.

The demand uncertainty of target segments is called "Implied Demand Uncertainty" which is different from "Demand Uncertainty" which reflects the overall uncertainty of demand for a product.

# **Strategic fit in demand uncertainty**

Being a strategic fit is all about building the supply chain strategies to face the customer demand and uncertainty or in other words a supply chain which is able to supply big quantities required, in the shortest lead time, covering large product portfolios and providing better services. Having these capabilities makes a responsive supply chain

# **Supply Chain Strategies**

- ✓ *Negotiating with many suppliers*
- ✓ *Long-term partnering with few suppliers*
- ✓ *Vertical integration*
- ✓ *Keiretsu*
- ✓ *Virtual companies that use suppliers on an as needed basis*

## **Many Suppliers**

- ☑ *Commonly used for commodity products*
- ☑ *Purchasing is typically based on price*
- ☑ *Suppliers compete with one another*
- ☑ *Supplier is responsible for technology, expertise, forecasting, cost, quality, and delivery*

## **Few Suppliers**

- ☑ *Buyer forms longer term relationships with fewer suppliers*
- ☑ *Create value through economies of scale and learning curve improvements*
- ☑ *Suppliers more willing to participate in JIT programs and contribute design and technological expertise*
- ☑ *Cost of changing suppliers is huge*

# Vertical Integration

## Vertical Integration

Raw material  
(suppliers)

Backward  
integration

Current  
transformation

Forward  
integration

Finished goods  
(customers)

## Examples of Vertical Integration

Iron ore

Steel

Automobiles

Distribution  
systems

Dealers

Silicon

Integrated  
circuits

Circuit boards

Computers  
Watches  
Calculators

Farming

Flour milling

Baked goods

# Keiretsu Networks

- ✓ *A middle ground between few suppliers and vertical integration*
- ✓ *Supplier becomes part of the company coalition*
- ✓ *Often provide financial support for suppliers through ownership or loans*
- ✓ *Members expect long-term relationships and provide technical expertise and stable deliveries*
- ✓ *May extend through several levels of the supply chain*

# Virtual Companies

- ☑ *Rely on a variety of supplier relationships to provide services on demand*
- ☑ *Fluid organizational boundaries that allow the creation of unique enterprises to meet changing market demands*
- ☑ *Exceptionally lean performance, low capital investment, flexibility, and speed*

# Competitive Advantage

Competitive Advantage is all about how your organization is being different from your competitor.

Firms these days, whether small or large, new age companies like Amazon, Ola or age old Firms like the Tatas, the Godrejs or Maruti, they all want to gain competitive advantage.

Firms can gain competitive advantage through many ways, be it Cost leadership, catering to niche markets. With the advent of Digital age, even digital technology has been used in almost every field to harness its power to gain advantage.

# Contd....

## **Cost Leadership**

Cost reductions can be achieved by eliminating waste. Various techniques have been used by Firms to reduce or eliminate waste. The concept of Lean Management has been built on completely eliminating waste.

## **Reliability**

In simple words, reliability can be defined as producing or providing consistent quality of products or services over a period of time. In every field of management, Quality has implications on a company's reputation.

## **Flexibility**

For any organization, there are always some customers, especially in B2B area, who give order on the last minute, and these customers are too important to decline.

# Contd...

## Short Throughput time

There is no denying in saying that with decrease in throughput time, cycle-time the production increases and the efficiency of the system increases.

Supply chain trends in modern business environment-Giving Competitive Edge to firms

A game changer can be a process, a product or simply a strategy that completely changes the way something is done. What is a game changing trend in supply chain? Game changing trends are the trends that

- Have a very big impact on a firms economic profits and shareholder value
- Are difficult to implement to implement successfully

# Game-changing Trends In Supply Chain That Can Give A Competitive Edge To Firms

## **Customer Relationship Management**

The first trend talks about customer relationship management. Keeping all the customers satisfied and still improving the firm's economic profits is a very tough job and that's where prioritizing customers comes in to picture. Customer relationship management talks specifically about that.

## **Collaborative Supply Chain**

## **Transformational Agile Strategy**

Agility can be defined as a firm's ability to quickly adjust tactics and operations within its supply chain to respond to changes, opportunities and threats in its environment. Very few firms today have a clear cut supply chain strategy, let alone transformational agile strategy. Firms must have a lucid strategy to achieve game changing supply chain.

# Contd...

## **Process Integration**

### **Relative Value for customers**

### **End-casting or Demand Management-**

End-casting is a heightened focus on final consumer demand. Big data has led to the development of the concept of end-casting. With the ubiquity of scanners, data is now available for analysis and for developing insights into demand patterns not just from channel partners but also from end customers.

### **Virtual Integration-**

Virtual integration is the use of internet to replace physical components that a firm has with timely and useful information. Firms engaged in virtual integration own only their brand and their clients thus eliminating the need to produce, ship or handle any such products as they are now outsourced.

## **Contd....**

### **Information sharing and visibility-**

Firms have started to find out links that connect the huge loads of information that is generated from multiple sources and are analysing the data using powerful hardware systems and business analysis expertise.

# Walmart's Competitive Advantages

## Savings Catcher

### Shop Online

If you decide to order online, just select “in-store pickup” when checking out, and many times your purchase will be available for pick up with 24 hours or less at the location you’ve selected.

### Use Coupons And Even Get Money Back

To start, Wal-Mart has an entire section of its website dedicated to helping you save with coupons on a variety of items. And, if you find a coupon that is greater than the price of the item, Wal-Mart will actually refund you the difference or apply the difference to other items you’re purchasing.

### Look For Marked-Down Baked Goods

If you’re shopping for groceries, swing by the bakery to see if there’s any marked down bread, pastries or other baked goods. Just like most any grocery store, Wal-Mart marks down day-old bakery items. There’s hardly a difference from the fresh stuff, aside from the price.

# Contd...

## **Purchase Your Prescriptions At Wal-Mart**

Wal-Mart has a prescription program where most generic prescriptions are just \$4 per month. Before you switch pharmacies, make sure the medications you or your family members are taking are on the list of \$4 prescriptions on Wal-Mart's website.

## **Shop Early For Groceries**

According to GoBankingRates, shopping in the morning for groceries at Wal-Mart could save you money on one of the most expensive items on your list: meat.

## **Shop Wal-Mart's \$1 Deals**

While the selection isn't going to be as expansive as a dollar store, Wal-Mart does have a fairly good section of \$1 items, ranging from food to toiletries to greeting cards.



**Thank You**