# **Transportation Management**



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## What is Supply Chain

Supply chain is moving goods and services from the place of creation to the place of consumption in a cost effective and efficient manner.

Right product, right time, right price and at right place.
Methodology and Models
Concepts and cases
Principles, procedures and best practices.

# **Functions of Supply Chain**

- Strategy planning and forecasting
- Demand and supply management
- Procurement and Purchasing
- Management and Finance
- Warehousing
- Inventory control (my area of research)
- Distribution management
- Transportation management
- Cost analysis and control measures
- Legal aspects of import and export procedure
- Customer service and complaints handling
- Reverse Logistics, Lean logistics and Six Sigma
- ERP solutions
- Key drivers of Supply Chain
- Quality and SCM

Material flow and Information flow Internal customers and External customers

### **Transportation Management**

Transportation happens to be the most fundamental part of logistic management. Transport costs include all costs associated with movement of products from one location to another.

The average transport costs ranges from 5 to 6% of the recommended retail price of the product.

Transportation is the movement of products, materials and services from one area to another, both inbound and outbound.

### **Transportation Management**

- 1. Mode of transports
- 2. Method of selection
- 3. Transportation costs
- 4. Fleet sizing and configuration
- 5. Routing and scheduling
- 6. Futuristic direction in transportation

# Mode of transports

Given below are the various mode of transports

- 1. By Road
- 2. By Railways
- 3. Water ways
- 4. Airways
- 5. Pipeline
- 6. Multimodal

Table shown below will help to get an idea on Selection of Mode of transport.

Speed	Frequency	Dependability	Payload	Points served
Air	Pipeline	Pipeline	Water (sea)	Road
Pipeline	Road	Road	Rail	Rail
Road	Air	Rail	Road	Pipeline
Rail	Rail	Water (sea)	Air	Air
Water (Sea)	Water (sea)	Air	Pipeline	Water (sea)

# Selection of transport



### Method of selection

The selection procedure for the transport mode could vary from the simple decision either to identify one feasible method of distribution.

Judgment: Identification of the important factors affecting the transport problem by the transport manager, and the transport mode from a list of alternatives available, so that the important features of the transport requirements are met.

### Method of selection

Cost- trade-off: It is where the impact of transport is calculated in relation to immediate terminal objectives and activities, and the total cost of distribution system is optimized.

Distribution models: This identifies and explains the interrelationships between the components of the distribution system at various levels of daily, weekly or monthly demands.

### Transportation costs

Transport costs vary from less than 1% (for machinery) to over 30 % (for food) of the recommended selling price of products, depending upon the nature of the product range and its market. However the average transport costs is between 5 to 6% of the recommended retail price of a product.

With inflation transport costs also rise because the major components are the workforce, fuel, spare parts and overall operating costs.

### **Transportation costs**

Transport is vital to the overall gambit (strategy / scheme) of SCM operation and therefore cannot be considered in isolation. The entire transportation process is to be monitored, in order to gauge the exact location and state of the materials being transported.

#### **Operational factors**

- Environmental factors
- Characteristics of alternate transport modes
- Combination approach / multi-modal transport operations.

### Fleet sizing and configuration

Fleet sizing objective is to employ through ownership, hire, lease and or rental the fewest possible trucks to manage the company's load profile/ shipping requirements.

In fleet sizing, increased availability yields fewer lost sales, shorter customer cycle times, improved customer services but higher fleet costs.

# Fleet sizing and configuration

Fleet size can be regulated and minimized by

- Utilizing standard size pallets and transport containers
- Vigorously monitoring fleet utilization levels periodically
- Maintaining total fleet visibility, including loading times, unloading, transit times and maintenance times.

# Fleet sizing and configuration

Fleet size can be regulated and minimized by

- Choosing low-use periods to conduct routine maintenance
- Monitoring and charging for demurrages for fleet detention by suppliers, customers, port authorities and carriers.
- Utilizing alternative coverage means during super peak periods to avoid carrying the burden of an oversized fleet.

# Routing and scheduling

Delay in delivery due to routing problems increase costs of goods manifold.

Therefore, to tide over this the company has to plan these activities well in advance with detailed coordination and judicious and realistic planning. Companies have to gear itself to such changing scenarios and terrain since

the very inception.

Efficient versus inefficient routing can save tremendous amount of money in fuel, labor, capital expenditures and significantly enhance customer satisfaction.

### **Routing and scheduling**

The objectives of routing and scheduling to minimize.

- Total route costs
- Number of routes
- Distance travelled

#### The constraints are

- Customer requirements and time available
- > Balancing of the route for the driver, to avoid overtaxing
- Maximum route time
- Vehicle capacity
- Start & Stop points enroute
- Infrastructure constraints

# Multimodal



### Multimodal

In today's world, intelligent transport systems impact on the infrastructure, networks, information systems and strategies of all modes of transport.

But beyond the boundaries between different modes of transport, intelligent transport systems also address the challenges of multimodality.

### **Futuristic Direction in transportation**

One salient aspect that we all have to understand that with e-services our

lead time to delivery has reduced considerably, but somehow the movement of the product and raw materials cannot move through e-services and have to restrict movement to roads, rail, air, waterways and pipeline.

The order can be placed through e-services in a faster mode and so can payment be but the products cannot be physically moved through the net.

### **Futuristic Direction in transportation**

Transportation too has improved considerably with the advent of technology and mechanical developments within a short span.

- Carrier relationship management
- Corporate traffic certification (training for entire department)
- Driver / Operator quality
- Joint procurement

