

GROUP NO.1

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TRANSPORTATION



Meaning and Definition

“The process of moving an item from point A to point B.”

“Safe, efficient, reliable, and sustainable movement of persons and goods over time and space”

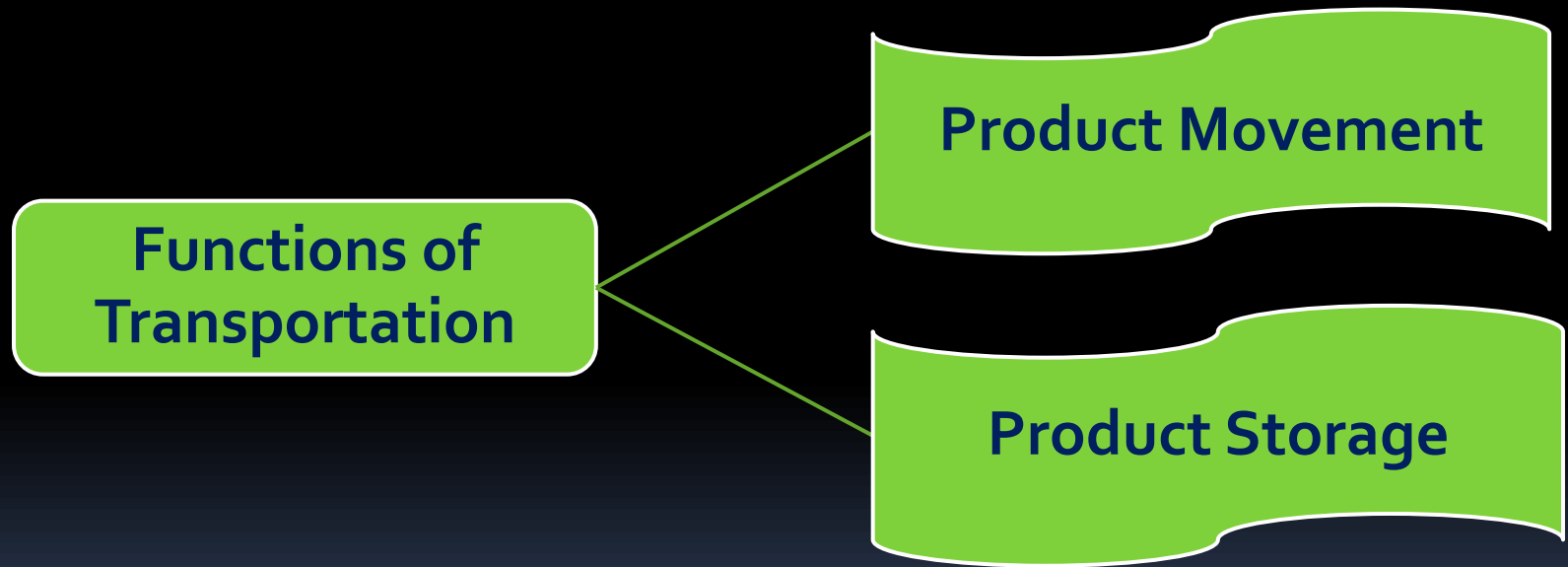
Transportation in Logistics:

- The operation of transportation determines the efficiency of moving products
- The progress in techniques and management principles improves the moving load, delivery speed, service quality, operation costs, the usage of facilities and energy saving.
- Transportation takes a crucial part in the Logistics Operation
- Therefore, transportation is the base of efficiency and economy in business logistics and expands other functions of logistics system

Importance of Transportation:

- ✓ Without well-developed transportation systems, logistics could not bring its advantages into full play.
- ✓ A good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality.
- ✓ A well-operated logistics system could increase both the competitiveness of the government and enterprises.
- ✓ Transport system is the most important economic activity among the components of business logistics systems

Transportation Functionality



Product Movement

- Temporal:

- Product is locked up during transit, hence inaccessible
- Positive amount of time is spent in transporting material
- Time is a resource[Temporal Resource] expended in Transportation
- During the time product is locked up costs are incurred in proportion of time

- Financial:

- Administration costs, Salaries, Maintenance costs are expended

- Environmental:

- Fuel costs are high[Creates air pollution, congestion, Noise pollution]

Product Storage

When unloading and loading is more expensive than storage

When storage space is limited [situation when inventory levels are high]

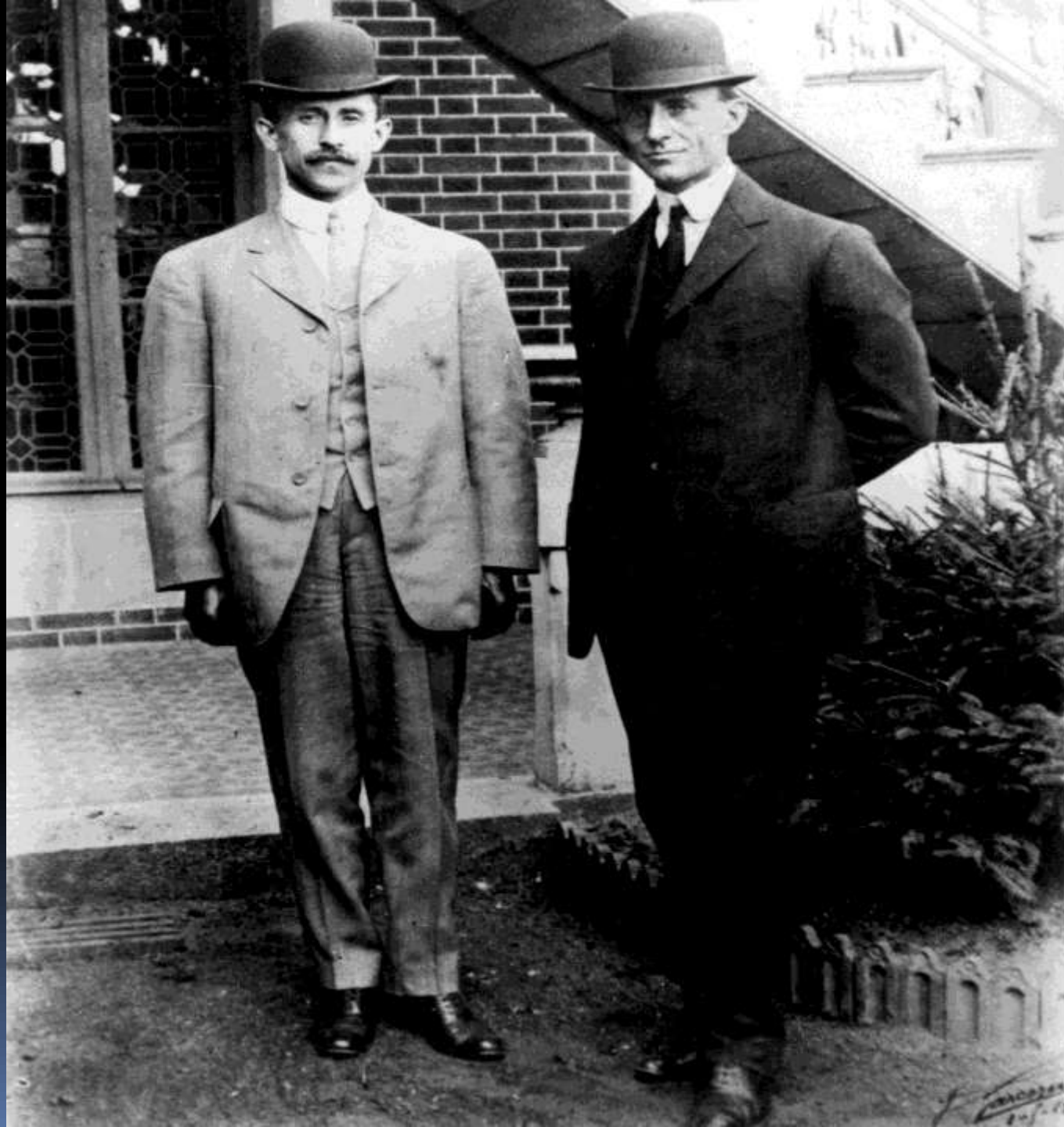


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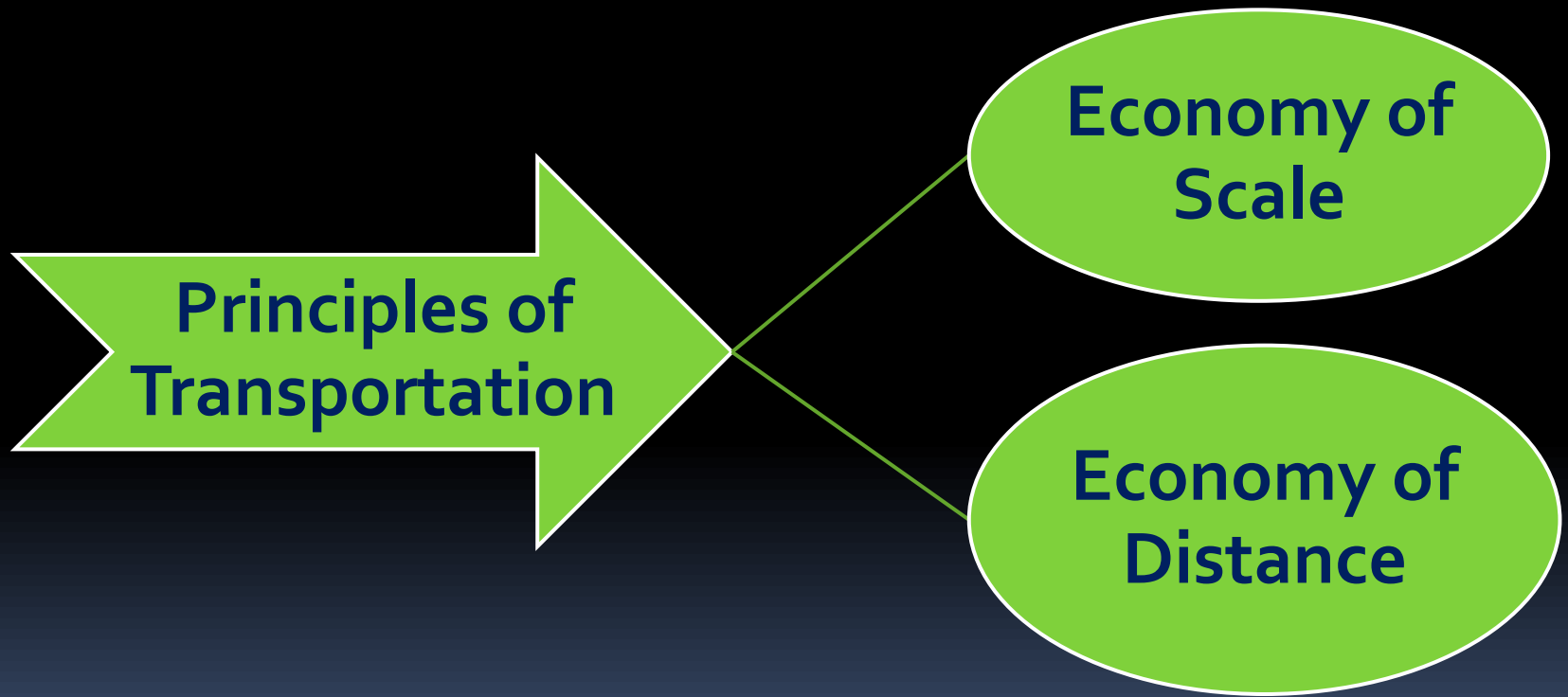
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Principles of Transportation





Types of Transportation

Rail Transport:

Advantages of Rail transport:

- ✓ It is a convenient mode of transport for travelling long distances.
- ✓ It is relatively faster than road transport.
- ✓ It is suitable for carrying heavy goods in large quantities over long distances.
- ✓ Its operation is less affected by adverse weather conditions like rain, floods, fog, etc.

Limitations of Railway transport:

- ✓ It is relatively expensive for carrying goods and passengers over short distances.
- ✓ It is not available in remote parts of the country.
- ✓ It provides service according to fixed time schedule and is not flexible for loading or unloading of goods at any place.
- ✓ It involves heavy losses of life as well as goods in case of accident.

Road Transport

■ Advantages

- ✓ It is a relatively cheaper mode of transport as compared to other modes.
- ✓ Perishable goods can be transported at a faster speed by road carriers over a short distance.
- ✓ It is a flexible mode of transport as loading and unloading is possible at any destination. It provides door-to-door service.
- ✓ It helps people to travel and carry goods from one place to another, in places which are not connected by other means of transport like hilly areas.

■ Limitations of Road transport

- ✓ Due to limited carrying capacity road transport is not economical for long distance transportation of goods.
- ✓ Transportation of heavy goods or goods in bulk by road involves high cost.

Water Transport

■ Advantages:

- ✓ It is a relatively economical mode of transport for bulky and heavy goods.
- ✓ It is a safe mode of transport with respect to occurrence of accidents.
- ✓ The cost of maintaining and constructing routes is very low most of them are naturally made.
- ✓ It promotes international trade.

■ Disadvantages:

- ✓ The depth and navigability of rivers and canals vary and thus, affect operations of different transport vessels.
- ✓ It is a slow moving mode of transport and therefore not suitable for transport of perishable goods.
- ✓ It is adversely affected by weather conditions.
- ✓ Sea transport requires large investment on ships and their maintenance.

Air Transport:

▪ Advantages:

- ✓ It is the fastest mode of transport.
- ✓ It is very useful in transporting goods and passengers to the area, which are not accessible by any other means.
- ✓ It is the most convenient mode of transport during natural calamities.
- ✓ It provides vital support to the national security and defence

▪ Disadvantages:

- ✓ It is relatively more expensive mode of transport.
- ✓ It is not suitable for transporting heavy and bulky goods.
- ✓ It is affected by adverse weather conditions.
- ✓ It is not suitable for short distance travel.
- ✓ In case of accidents, it results in heavy losses of goods, property and life.

Transportation Impacts

The speed, cost, and capabilities of available transportation have a significant economic impact on an area ---
Highway, rail, freight, transit, shipping

Countries with better/advanced transportation networks and services are leaders in industry and commerce

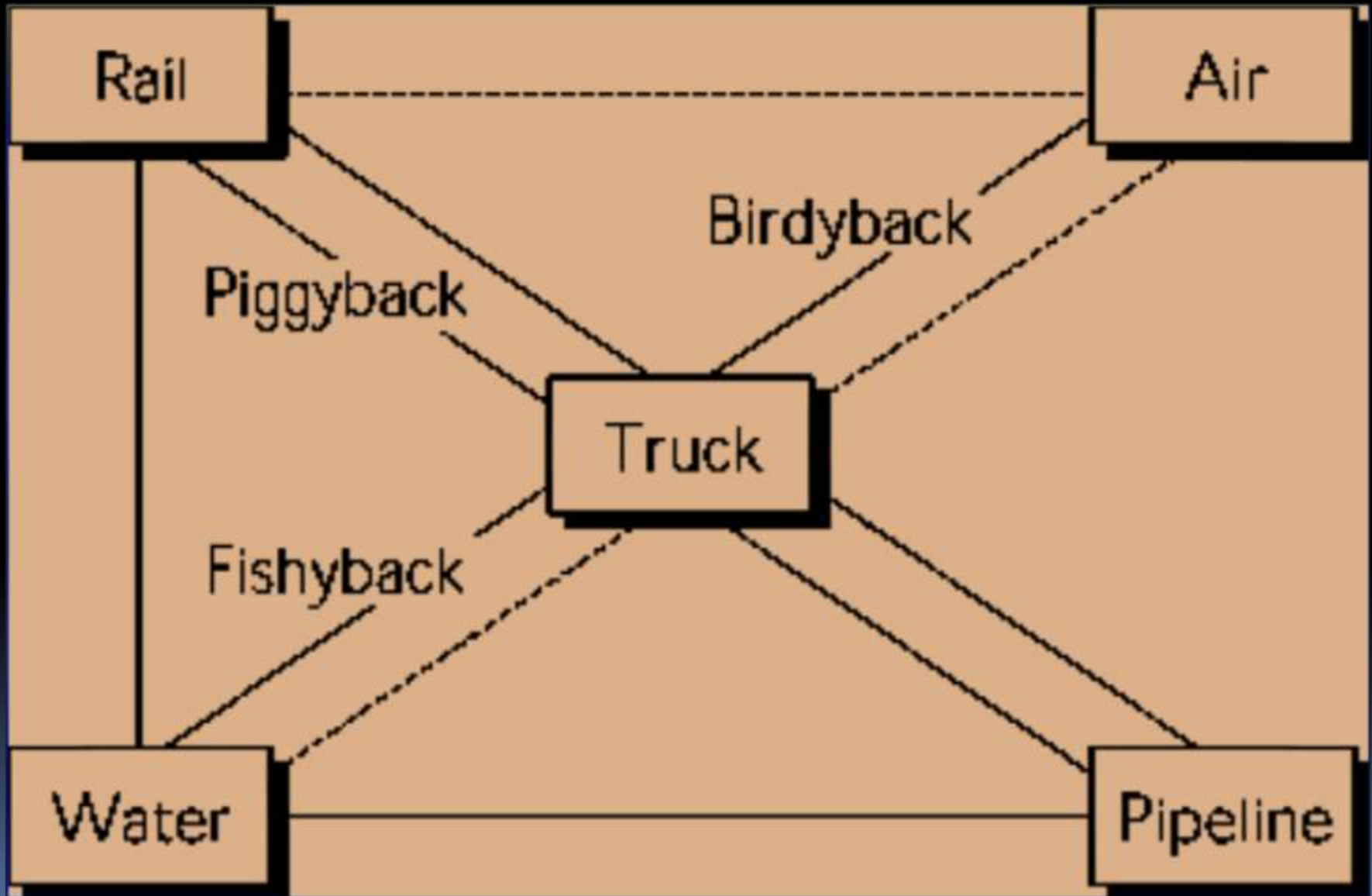
USA, Japan, Germany, ...

What are Current Transportation Problems?

1. Financing
2. Congestion
3. infrastructure
4. Safety
5. population
6. Increased truck weights

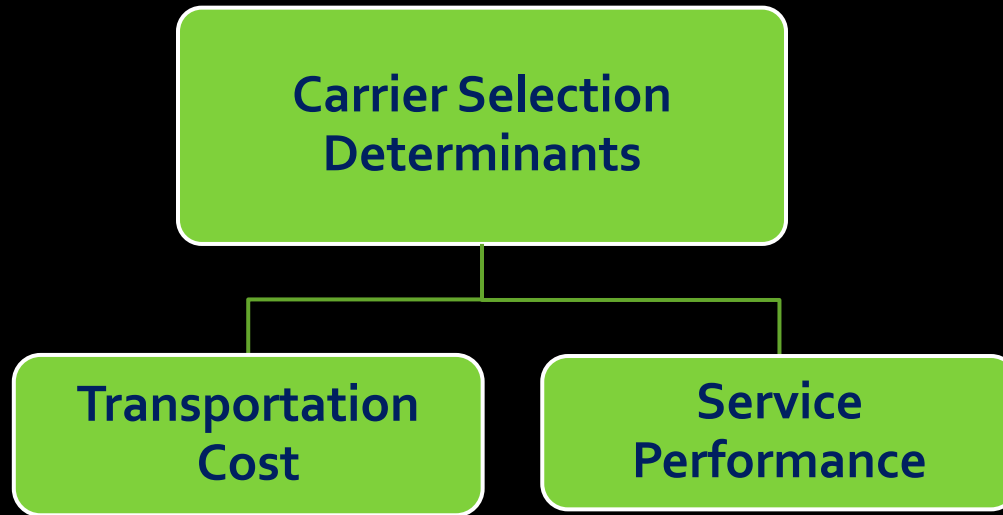


Multimodal Transportation:



Relative Opening Characteristics by Transportation Modes:

Operating Characteristics	Rail	Truck	Water	Pipeline	Air	Remarks
Speed	3	2	4	5	1	Air is the fastest
Availability	2	1	4	5	3	Road is the best since they can drive from origin to destination
Dependability	3	2	4	1	5	Pipeline ranks best-As the service is continuous and there is no stoppage due to traffic or congestion
Capability	2	3	1	5	4	Sea is the best-Can handle all types and size of cargo
Frequency	4	2	5	1	3	Pipeline is ranked best-As the movement is continuous
Composite Score	14	10	18	17	16	Lowest rank is the Best-



Transportation Costs:

Minimum Weights, Loading, Unloading Facilities, Packaging, Damage in Transit and special services available from a carrier

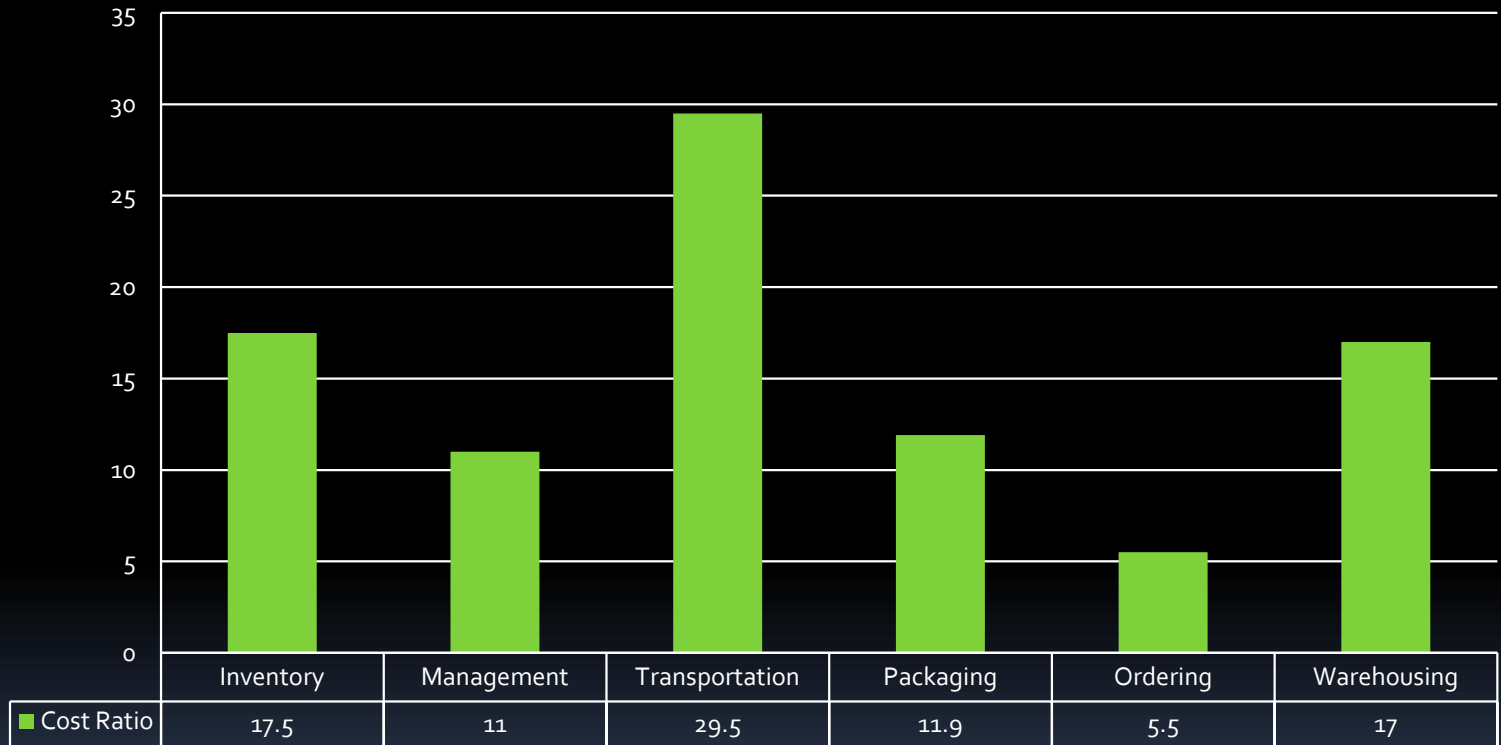
Service Performance:

- Transit Time
- Reliability
- Capacity
- Accessibility
- Security

Cost Structure For Each Module:

Mode	Fixed Costs	Variable Costs
Rail	High- Equipments, Terminals , Tracks ,etc	Low
Road	Low- Highway provided by government	Medium- Fuel , Maintenance, etc
Water	Medium- Ships and Equipment	Low- As capacity is huge
Pipeline	Highest- Right of the way , construction, Equipment for control station and Pumping capacity	Lowest- Insignificant labour costs
Air	Low- Aircraft and cargo handling systems	High- Fuel, labour, Maintenance

Cost ratio of logistics items



Factors Influencing Transportation Costs And Pricing:

Product Related Factors	Market Related Factors
Density	Whether the Product is transported Domestically or Internationally, Seasonality of Product Movement
Stow ability	Location of Markets, which determines the distance goods must be transported
Ease or Difficulty of Handling	Nature & extent of government regulation
Liability	Balance or imbalance of Freight Traffic in to and out of a Market

Conclusion:

- Transportation and logistics systems have interdependent relationships that logistics management needs transportation to perform its activities and meanwhile, a successful logistics system could help to improve traffic environment and transportation development.
- Since transportation contributes the highest cost among the related elements in logistics systems, the improvement of transport efficiency could change the overall performance of a logistics system.
- Transportation plays an important role in logistics system and its activities appear in various sections of logistics processes.
- Without the linking of transportation, a powerful logistics strategy cannot bring its capacity into full play

Thank You