

Multi-modal Transportation



Perspectives

Trade & Logistics



Function

- Production
- Transportation
- Inventory
- Marketing

Value

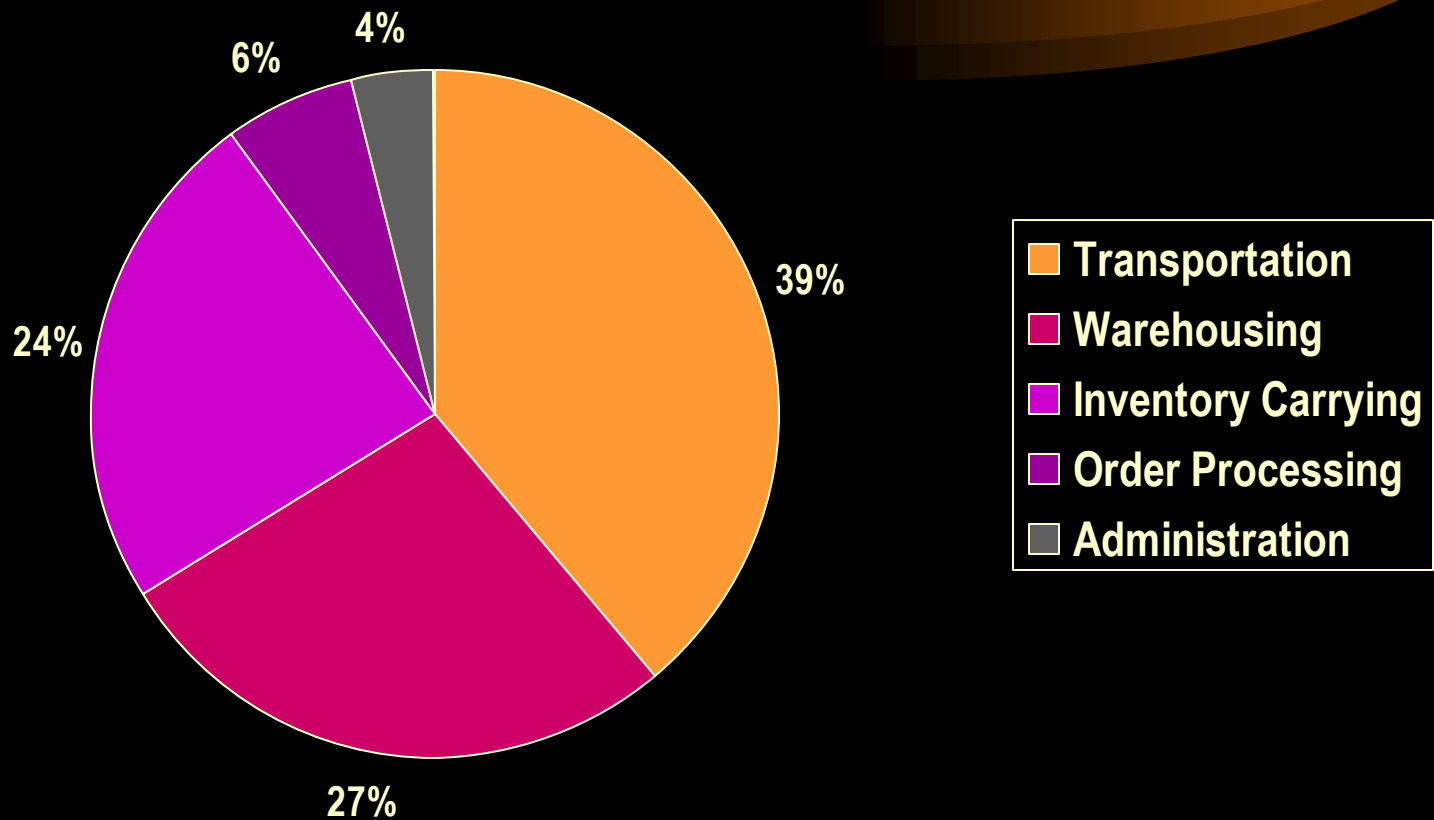
- Right product
- Right place
- Right time
- Competitive price

Objective:

Delivery Costs to be minimised

- Direct Costs: paid for transport services provided for moving/transferring/storing.
- Indirect costs- quality of service- door to door transit time, risks of loss or damage.
- Financial impact of the above in terms of interest on inventory, insurance premium costs, consequential costs.
- Costs associated with the administration of the physical movement of goods(order processing, cargo tracking).

Worldwide Logistics Costs, 2002



Transport Options: Uni-modal

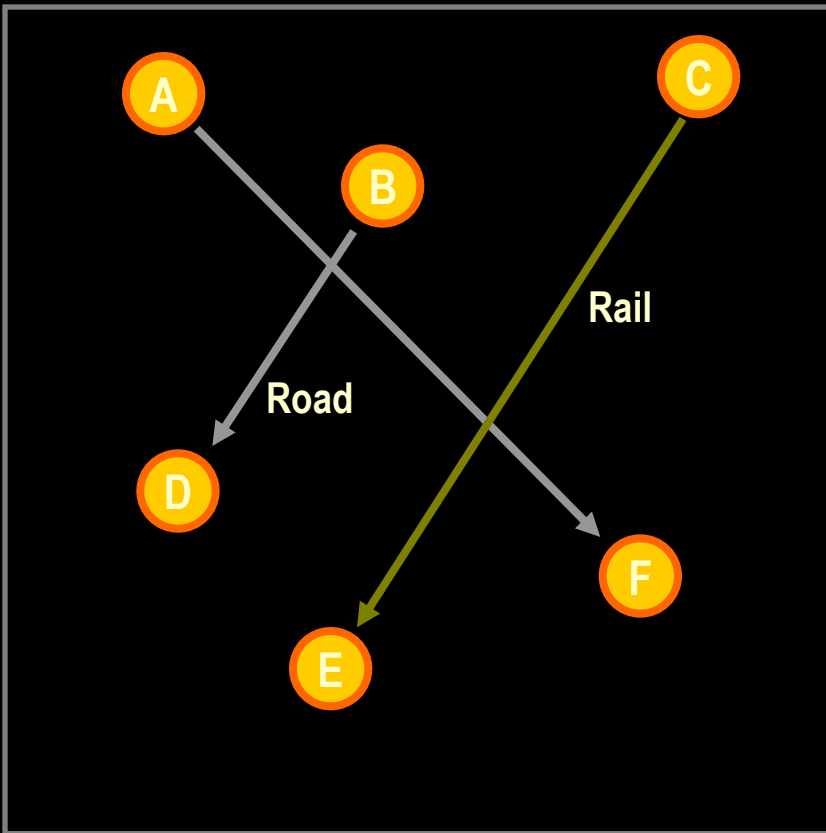
- Unimodal-- the transport of goods by one mode of transport by one or more carriers(service providers).
 - If one carrier, he issues his own transport document, a bill of lading, an airway bill, a consignment note.
 - If more than one carrier, one of them may issue a through bill of lading covering the entire transport.
 - The issuing carrier may be responsible for the entire transport or for only that part which takes place on board his own vessel.

Transport options: Inter-modal

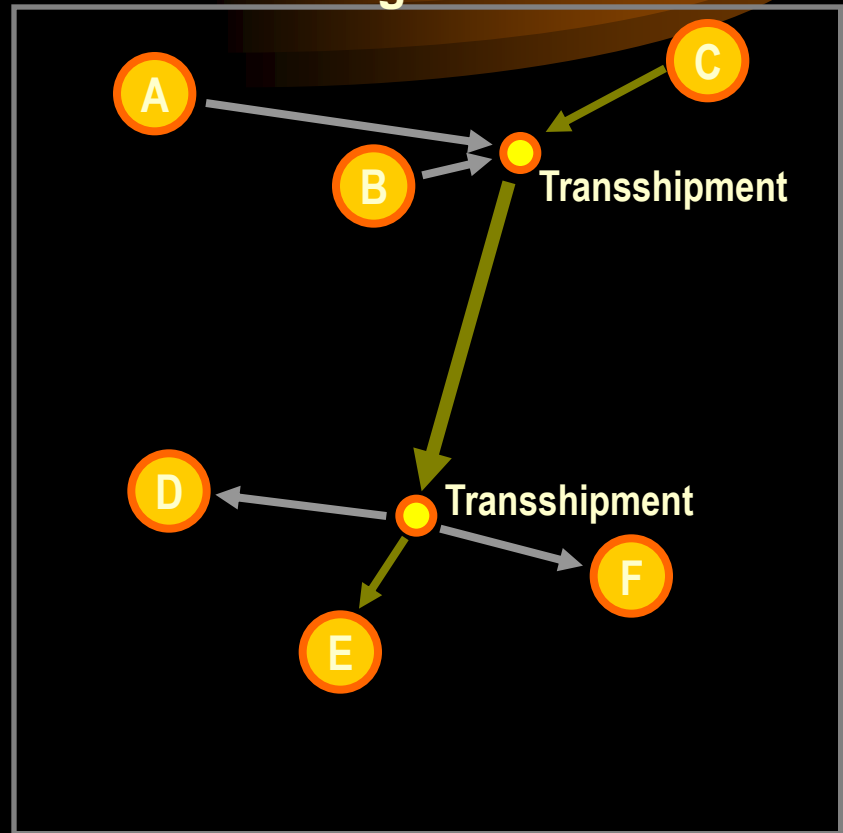
- Transport of goods by several modes.
 - One of the carriers organises the whole transport from point of origin to destination.
 - If he takes responsibility only for the portion he performs himself, he may issue an inter-modal or combined transport bill of lading.
 - If he takes responsibility for the entire transport, he issues an ***Multi-modal transport document***.

Intermodal Transportation

Point-to-Point Network



Intermodal Integrated Network



Intermodalism

- Conventional: Competition between the modes. Transport system **segmented and un-integrated**. Each mode to exploit its own advantages in terms of cost, service, reliability and safety.
- Intermodalism. Involving the use of at least two different modes. The line-haul economies of rail may be exploited for long distances, with the efficiencies of trucks providing local pick up and delivery.
- The key is that the entire trip is seen as a whole, rather than as a series of legs, each marked by an individual operation with separate sets of documentation and rates.

Essence of Multi-modalism

- One transport document
 - One Rate
 - Through Liability
-
- *Intermodalism is an operational concept*
 - *Multimodalism has commercial connotation.*

Why Multimodal Transport

- Variety of cultures, languages across international trade corridors.
- Divergent commercial practices at both ends of trade.
- Infrastructural incompatibilities.
- **Complexity of operations involving the use of various transport links.**
- Practical for a trader to let one qualified operator **organize and be responsible & accountable** for the entire transport chain.

What an Multi-modal Transport Operator looks for

- *Minimising cost.*
- *Minimum handling.*
- *Standard procedures and minimum documentation*
- *Hassle-free border crossing with minimum detention.*
- *Security of Cargo*

Containerisation ensures much of these.

Containerisation: Advantages

- Inter-modal compatibility– can be loaded on trailers, rail wagons, ships & barges. Low-cost, fast transit.
- Flexibility of usage: wide variety of cargo can be transported.
- Through liability possible.
- Door to door service feasible.
- Parcel size can be small.

Container on Truck



Double stacked Containers on Rail



Containers being Unloaded to a Barge



Containership



OPEN TOP CONTAINERS



Refrigerated Container



Tank Containers



40-Foot Containers



Containerisation: Advantages

- *Managing & monitoring easy.*
- *Cargo does not require multiple handling.*
- *Transshipment easy.*
- *Can be used for storage of cargo.*
- *Better security.*

Land containers

- March 1921: Container Service between Cleveland and Chicago by the New York Central Railway Co.
- Development of piggyback system— trailers on specialised flat cars.
- Land containers developed and introduced by the US railroads widely adopted by the European and Japanese Railways, particularly after WW II.

Marine containers



- First used by the US army during the WW II.
- Fairland—a full fledged Containership(1966).
- The idea came from the piggy-back system.
- Made multi-modal transportation on a global scale possible.

Physical requirements



- Development of ICDs and CFSs.
- Development of Port facilities & port-side container terminals.
- Feeder & Mainline services.
- Development of Container Trade Routes: land-sea, land-inland waterway, and land-bridging across borders.

Inland Container Depots



- Customs Formalities & documentation
- Storage of Cargo and Containers.
- Aggregation/dis-aggregation of cargo.
- Stuffing/de-stuffing of Cargo.
- Handling of containers.
- Despatch by rail/road.
- Road/rail connectivity, availability of adequate stacking area, type of handling equipment, warehousing facility, security arrangements are of critical importance.

Handling Equipment : Reachstackers



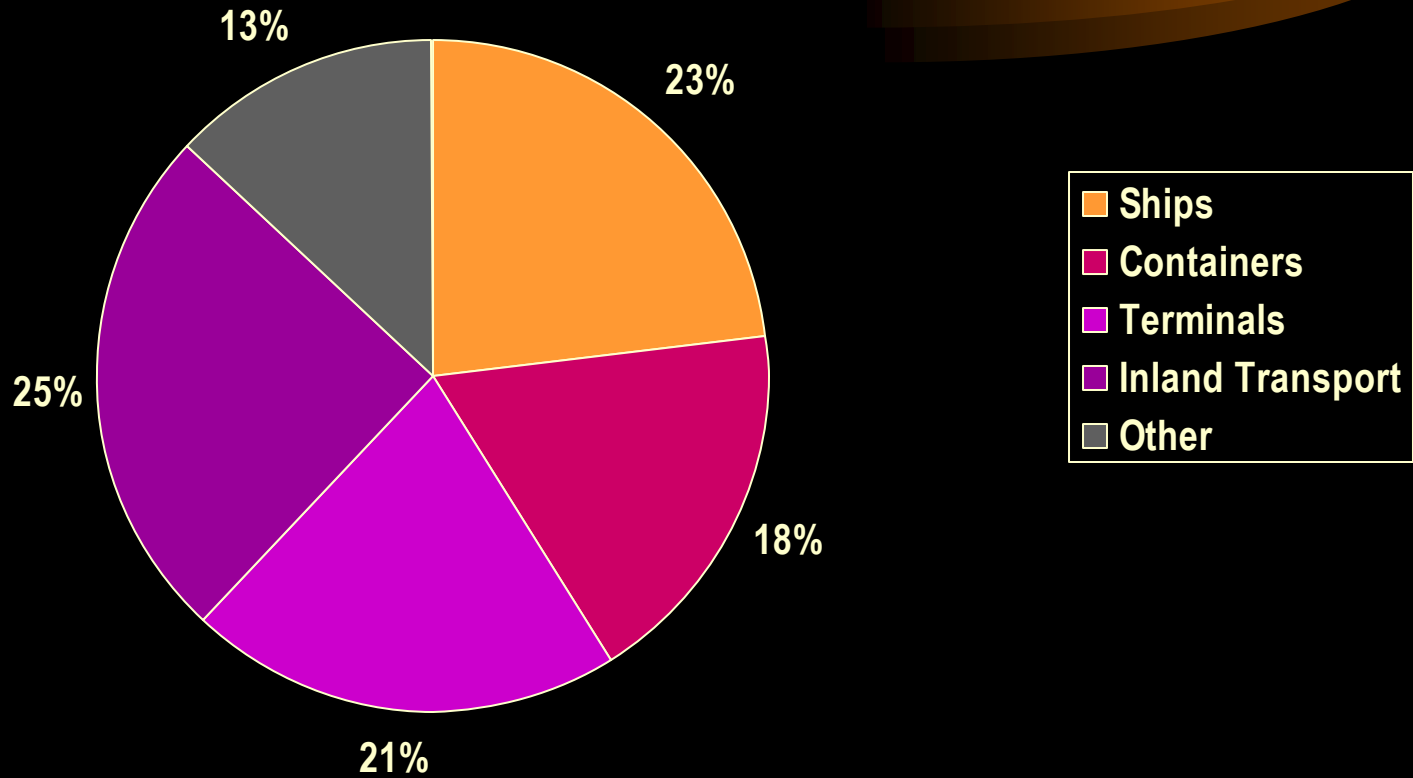
Handling equipment: RTG



Port-side container terminal

- Draft at the port- size of vessel.
- Number of berths- pre-berthing delays.
- Handling cranes- Number of moves.
- Security: Scanning arrangements
- Hinterland Connectivity-rail/road/inland waterway.
- CFS facility: Stuffing/de-stuffing, warehousing, re-packing facility.

Container Transport Costs



Land-bridging Across borders:



Issues

- Inter-modal transport services.
- Road linkages : all weather roads.
- Rail linkages: Compatibility of gauge, axle load, traction.
- Bridging the Missing Links.

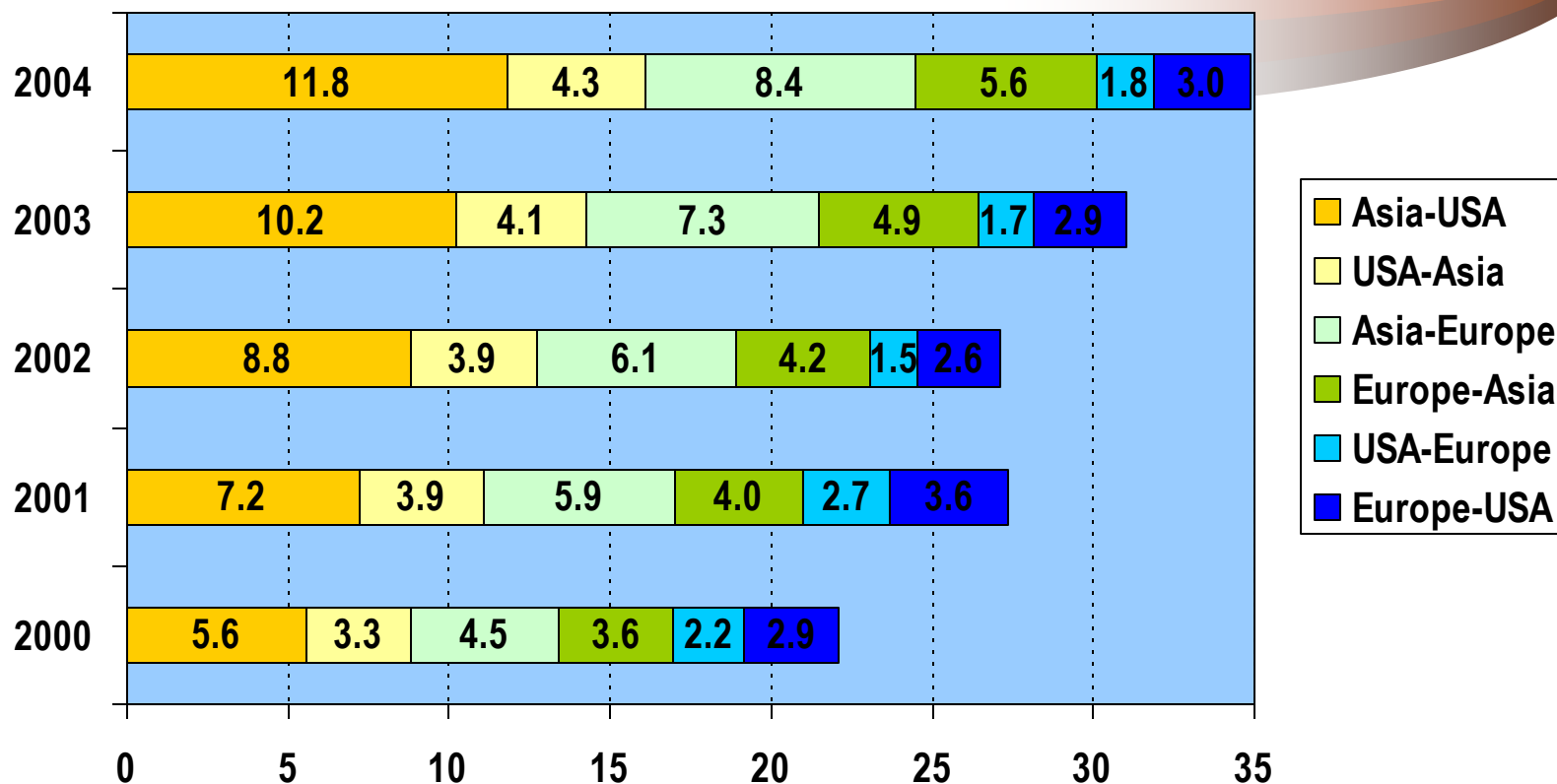
Land-bridging across borders:

Issues



- Border Crossing Formalities.
- Improvements in Customs stations.
- Electronic Data Interchange(EDI).
- In-transit warehousing facilities.
- Security

Containerized Cargo Flows along Major Trade Routes, 2000-2004 (in millions of TEUs)



Increasing Importance of Asia

Trends In Globalisation



Free Trade



Customs Union



Common Market



Economic Union



Political Union

Trends In South Asia



- Bilateral Free Trade Agreements.
- Growth of Regional Economies.
- Growing importance of Regional Co-operation for trade among developing countries in south-Asia.
- ASEAN, BIMSTEC, SAFTA.

South Asia

- Benefits of geographical contiguity are often lost due to poor transport linkages.
- Countries vary in terms of the availability and quality of infrastructure.
- Many missing links between highways, besides poor condition of roads in some countries.
- Deficient Railway links. Lack of gauge harmonization.
- The ports need to be modernized.
- Lack of uniformity in the customs and clearance procedures at the borders.

Increasing Containerisation:

Why ?

- Low Volume of Intra-region trade in South Asia.
- None of its neighbours figure in the list of top 10 trading partners of India
- Intra-SAARC trade is about 5% of South Asia's Trade with the rest of the world.
- In order to reap the true benefits of the Regional economic Co-operation, developing inter-modal linkages and multi-modal capabilities are necessary.



THANKS FOR YOUR TIME