Liner Service Networks

K.K.K.Chand
C.E.,F.I.Mar.E.,MCILT
Three Main Liner Service Networks

• Overview of different service types of shipping lines and dynamics in liner services configuration and Design
• Global snapshot of world wide liner shipping network
• Changing geographical distribution of main interport links
Background of Liner Shipping

• 1956 – Malcolm Mclean launched the first containership “Ideal X”
• 1970 – standard container sizes
• Container shipping occupies 12% of the whole maritime fleet
• Fastest growing sector. Currently > half of world trade value
• Expands to other commodities (Neo Bulk)
World container traffic
Container Traffic

- 2011 - 580 Million TEUs trade worth of USD 4 Trillion
- Container port throughput is 1.5 Billion TEUs
- Average 3 times a container is handled between first port of loading and last port of discharge
- Centre of gravity of liner services shifted to Asia
Configuration of Liner
Shipping

- Growing demand in global supply chain in terms of frequency, direct accessibility & transit times
- Expansion of traffic by increasing no. of strings operated, vessel upsizing or both
- While configuring to trade off between requirements of customers and operational costs
- Demand side exerts pressure on service schedules, port rotations and feeder linkages
Bundling of container cargo

- Bundling within the individual lines service
- By combining 2 or 3 liner services
- Bundling can bring in better efficiencies instead of end to end service
- Conceived as x round trips of y vessels
- Vessel sizes have gone up from 1000TEUs to largest 17000TEUs
Bundling

- Hub & Spoke network (Hub/Feeder)
- Interlining
- Relay
- Due to bundling port of calls have fallen from 4.9 in 1989 to less than 3 in 2011
- Hierarchy port- for some it is regional hub and for some it is secondary feeder
- Complex bundling
Cargo Demand

- To estimate volatility
- Geographical dispersion &
- Seasonality of such demand
Design variables

- Liner service type
- No. and order of port call
- Vessel speed
- Frequency
- Vessel size
- Fleet mix
- Also shipping routes, network patterns & port centrality
Conclusion

- Requirements on container shipping networks
- Frequency
- Reliability/integrity
- Global coverage of services
- Rate setting
- Refining services by rationalizing or by creating new service configurations through a combination of line bundling itineraries and transshipment/interlining/relay operations at the pivotal ports of the network
- Interdependency between maritime centrality and port throughput for container ports
THANK YOU