

Liner Service Networks

K.K.K.Chand

C.E.,F.I.Mar.E.,MCILT

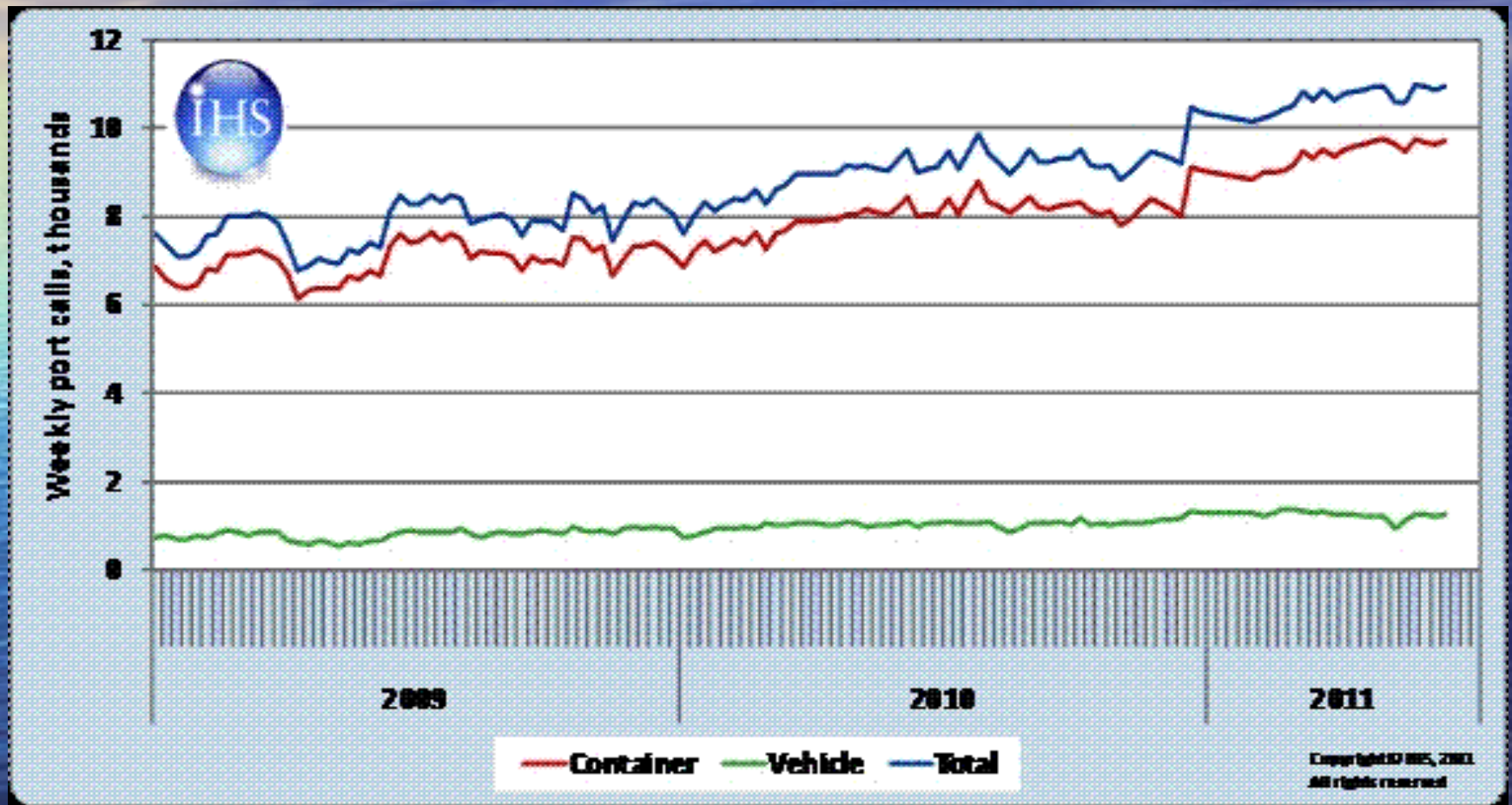
Three Main Liner Service Networks

- 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

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

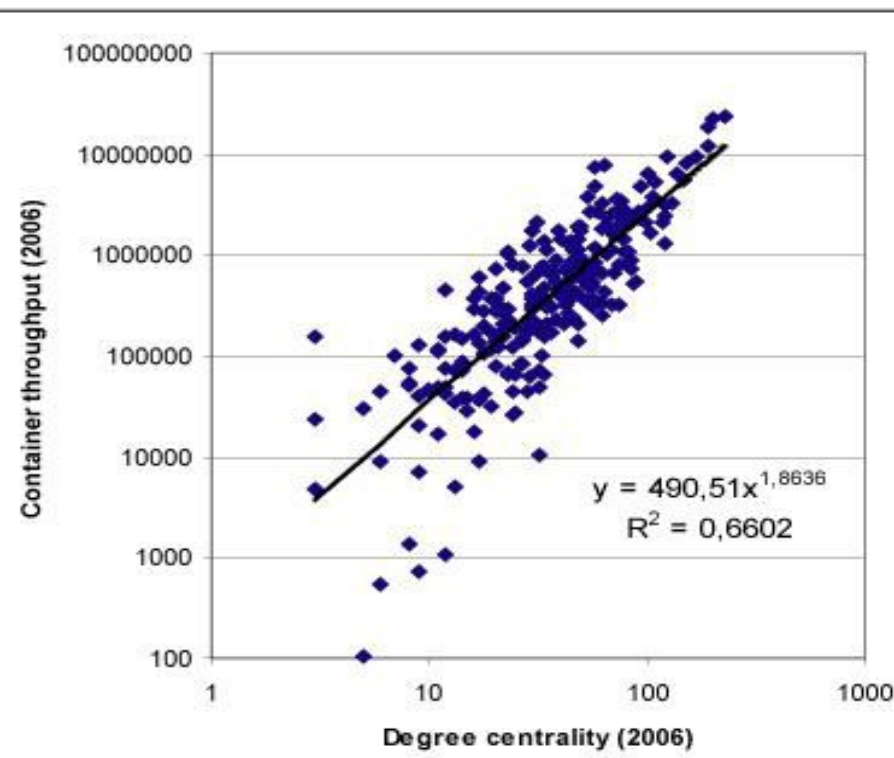
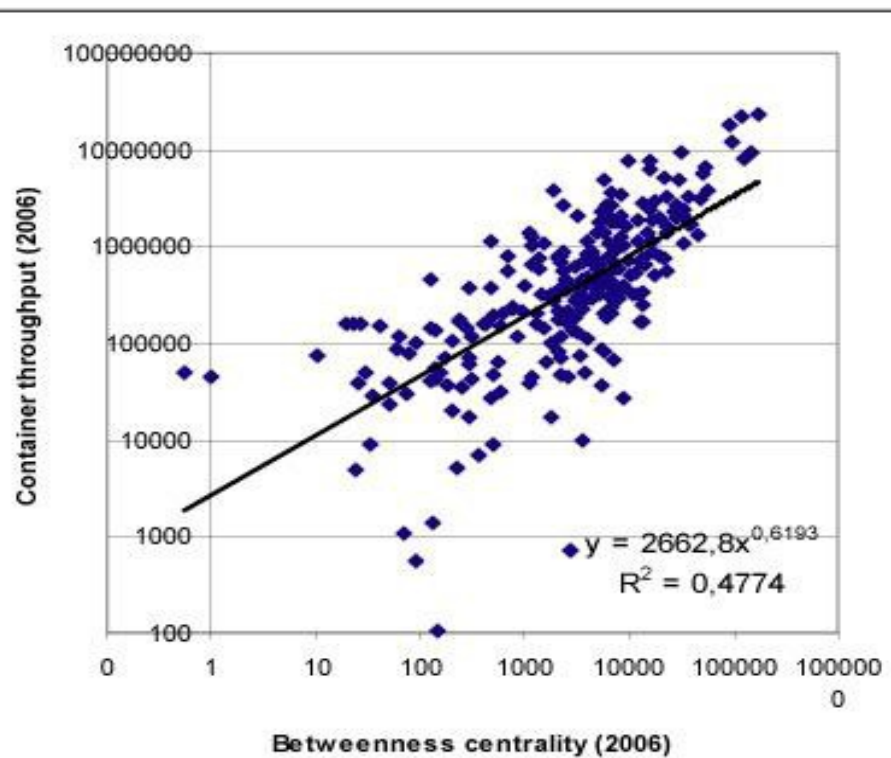
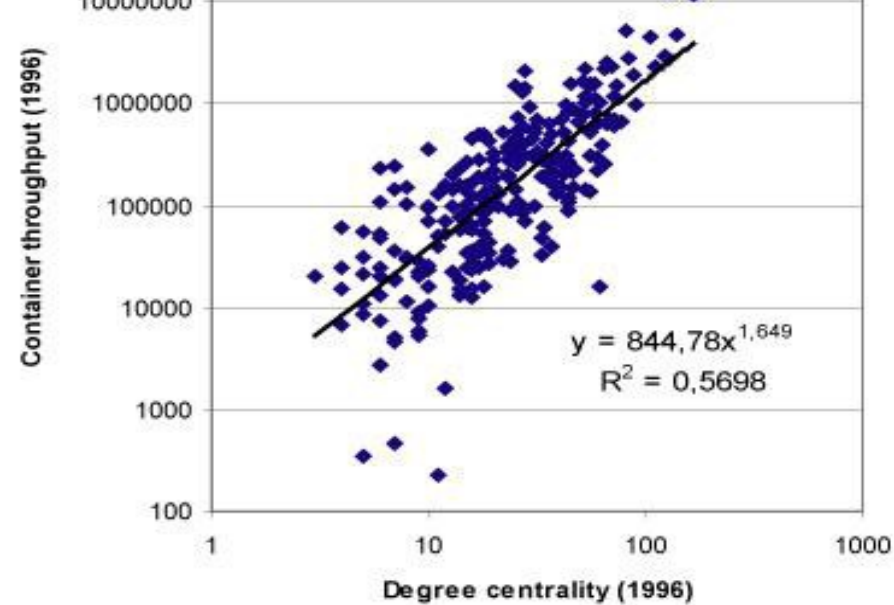
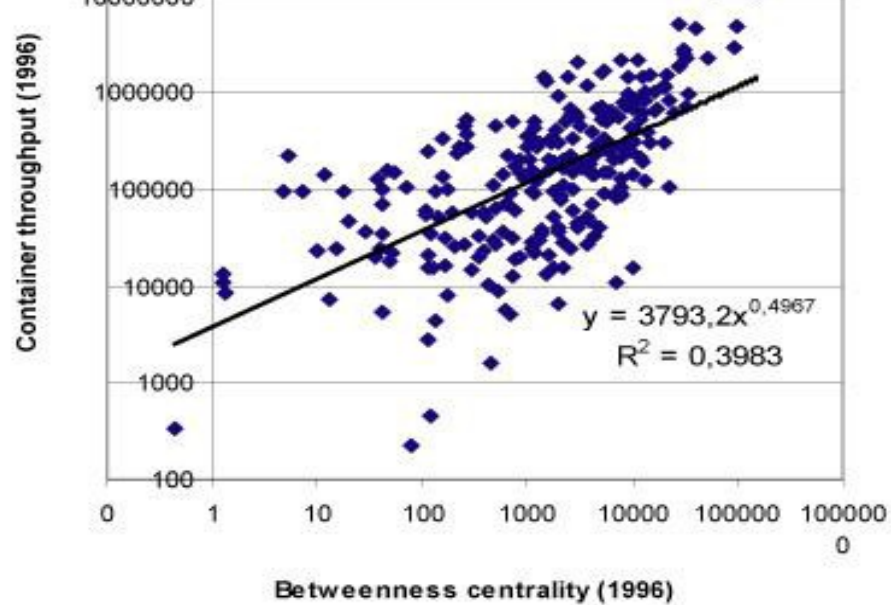
- To estimate volatility
- Geographical dispersion &
- Seasonality of such demand

Design variables

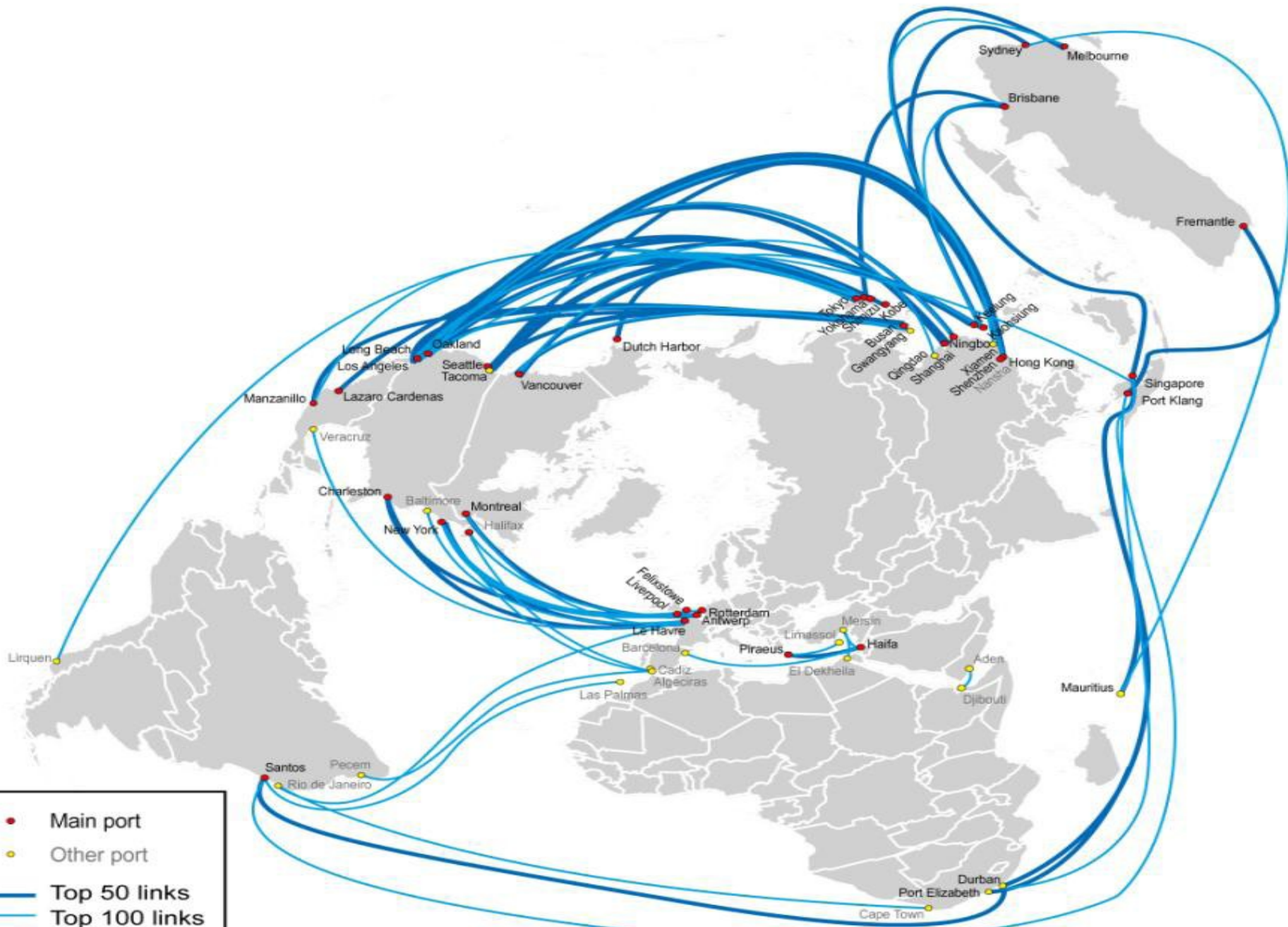
- Liner service type
- No. and order of port call
- Vessel speed
- Frequency
- Vessel size
- Fleet mix
- Also shipping routes, network patterns & port centrality

Conclusion

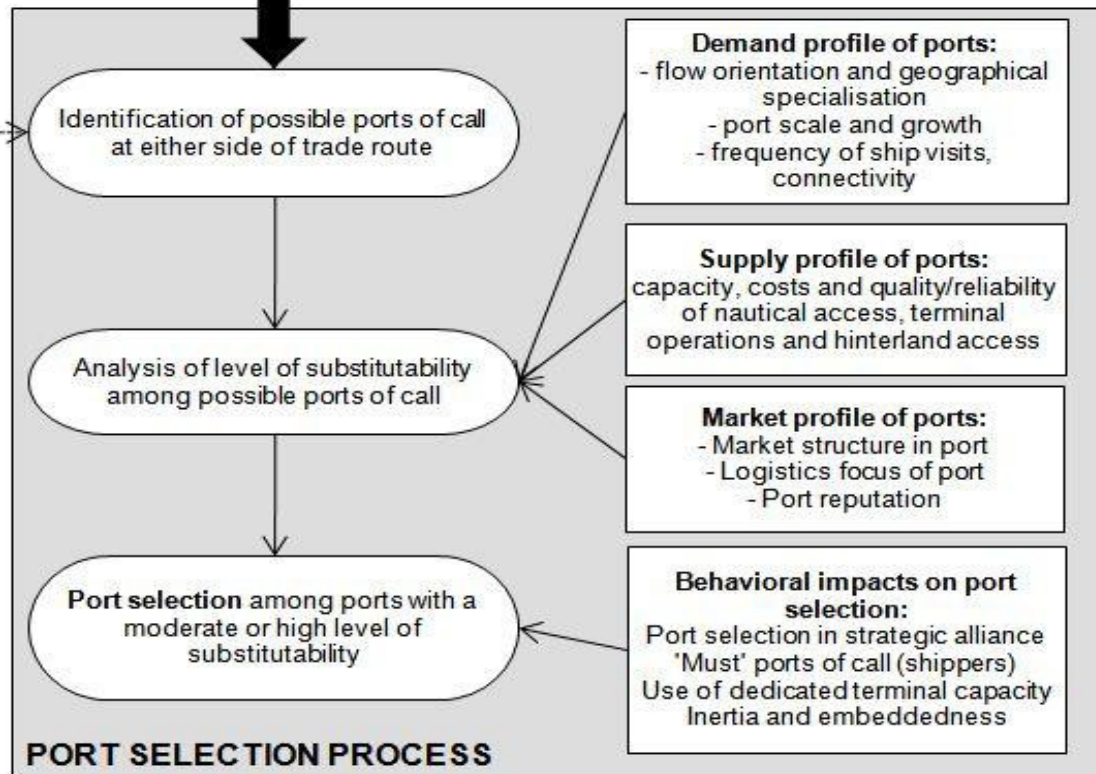
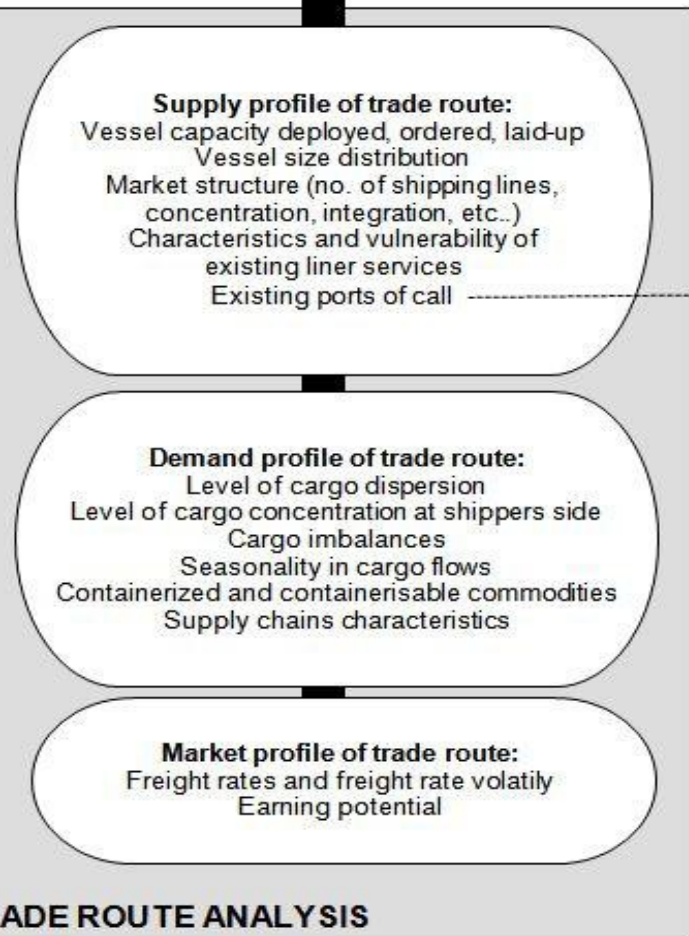
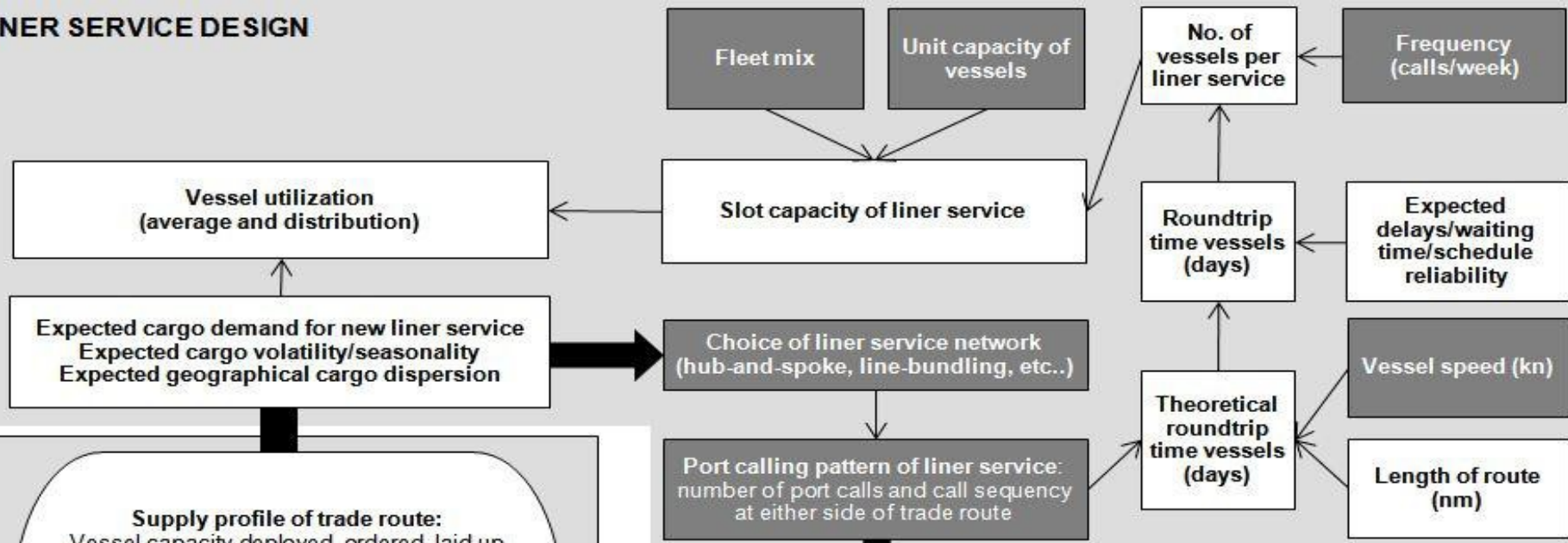
- Requirements on container shipping networks
- Frequency
- Reliability/integrity
- Global coverage of services
- Rate setting
- Refining services by rationalizing or by creating new service configurations through a combination of line bundling itineraries and transshipment/interlining/relay operations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

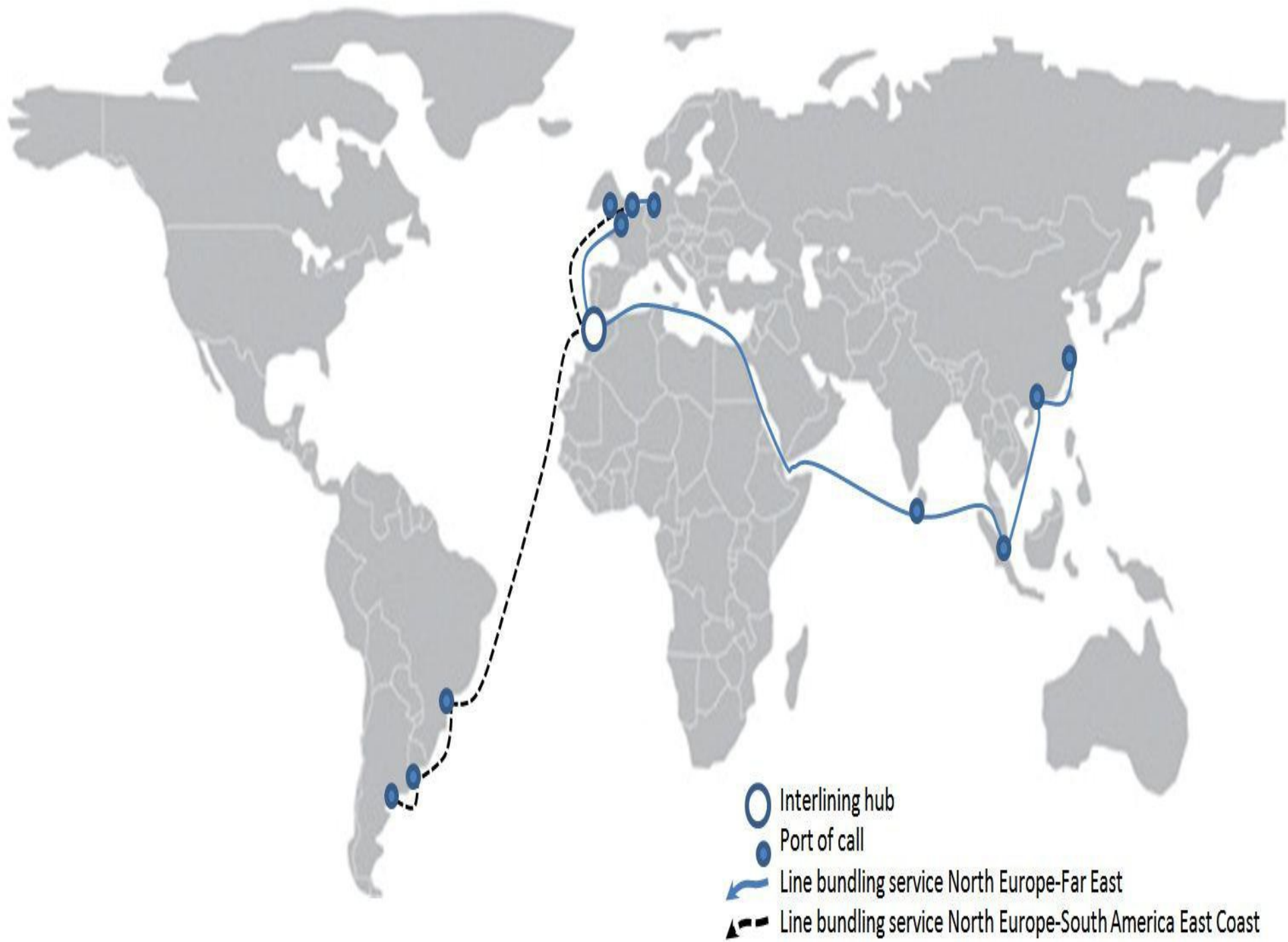


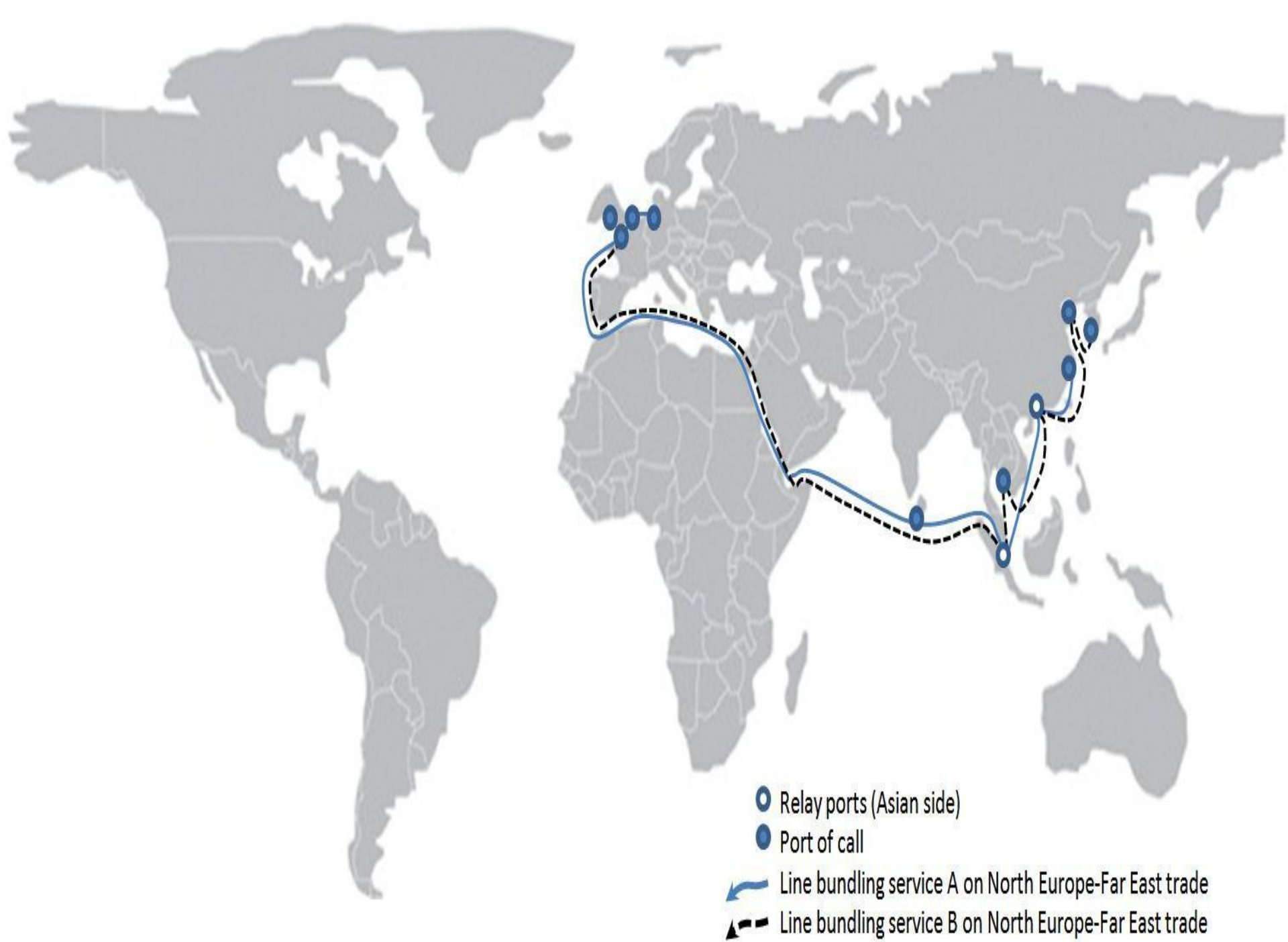
2006



LINER SERVICE DESIGN







A wide-angle photograph of a calm ocean under a vast, blue sky. The sun is low on the horizon, creating a soft glow and a faint rainbow on the left side. The water is a deep blue with gentle ripples. The text "THANK YOU" is centered in the middle of the image in a white, bold, sans-serif font with a thin black outline.

THANK YOU