Impact of Panama Canal Expansion on Asia-North America Container Trades

Andrew Penfold
Director, Ocean Shipping Consultants Ltd.

Panama, May 2007

Panama May 2007
Overview - Tactical and Strategic Perspectives

- The Asia-North America trades are highly dynamic - the share of different regions has changed rapidly over time
- In the US, attention is focused on providing capacity, dealing with environmental issues and intermodal problems
- Step back for the Strategic View - there are major changes emerging, where will we be in 2015?
- The market will look quite different in 2015 than it does now.
- The basic position will be the revitalisation of the ‘all water’ option

The outlook will be shaped by intrinsic (container-specific) factors and macro-issues: a volatile mix of uncertainty

Panama May 2007
Forecast Summary - what is the outlook?

- Strong underlying demand growth will continue but there are increased risks
- The risks are macro-economic - how will the Chinese bubble be sustained and what are the implications for container trade and ports?
- There are also significant technical changes that will revise the structure of the trades:
  - Panama Canal development
  - East Coast port improvement
  - Intermodal congestion
  - Environmental problems in California and PNW
- Container distribution is set to change - the West Coast will see much greater competitive pressures
Demand Projections

- Latest OSC projections for North American demand indicate continued strong potential - but the forecast range has widened.
- The short term outlook to 2010 seems quite robust with a further expansion of nearly 25 per cent forecast.
- The core model relates container demand to GDP and the indications are for continued growth through to 2020.

**BUT:**

- Sustainability of the model is being questioned.
- How much longer can imports be funded and can the Chinese economic bubble continue to expand?

*Financiers increasingly insist on ‘high risk’ scenarios - the position is the same (less three-four years) in North Europe.*

Panama May 2007
North America - Forecast Container Port
Demand to 2020

Panama May 2007
Market Share by Region

- Longer term historic review confirms shifts in port region shares
- Not just the result of Asian acceleration but also transport economics. Note:
  - Intermodal and ship size revolution saw South Pacific take share from Atlantic
  - This has now stabilised
  - Atlantic - especially NY/NJ now lifting share
  - This is due to congestion and port/intermodal constraints on the West Coast
  - There are now economic alternatives and future container trends will boost these options

This fluidity will continue. Major changes will alter market shares - probably more significantly in the next ten years

Panama May 2007
Future Container Demand by Port Region

• Port shares determined by:
  - Total transport costs
  - Capacity availability
  - Transit times
  - Local versus intermodal market

• Some trends in regional distribution:
  - A decline in market share for California - increased All Water and Mexican competition, capacity and environmental limits
  - North Atlantic share lifted - Panamax size increase boosts all water services (Suez share falls)
  - Pacific NW - some increase in share

Nothing is certain - market shares will change

Panama May 2007
Containers Ship Size Evolution

Feeder

Panamax

Post-panamax

ULCS & New Panamax

Panama May 2007
Changes in Through Shipping Costs - the main driver

- Cost comparison between 2006 and 2015. Sum of:
  - Underlying shipping costs (largest possible vessel)
  - Stevedoring charges
  - Canal charges
  - Intermodal delivery costs
- Major changes by 2015:
  - Panamax from 2015 means 11,000TEU (probably much more)
  - Key Atlantic ports improve water depth
  - Ultra Large Container Ships (14,000TEU+) - some transpacific trades and via Suez
  - New intermodal possibilities - Mexico, expanded BC option

Two representative sources Shanghai (for NE Asia) and Singapore (for SE Asia)

Panama May 2007
Cost Sectors and Outlook I - stevedoring

- Stevedoring charges LA/LB:
  - LA/LB costs are very high and rising
  - Productivity is low in Californian ports
  - Capacity expansion is problematic
- East Coast stevedoring charges:
  - Currently costs average some 15 per cent less than in California
  - Capacity is available and being developed
  - Southern ports are cheaper than NY/NJ
  - Transshipment possibilities in Caribbean
- Pacific NW stevedoring charges:
  - Slightly cheaper than LA/LB
  - Scope for higher volume but will remain a niche
Cost Sectors and Outlook II - shipping costs

- Calculated on the basis of known and forecast trading costs:
  - Original vessel newbuilding costs from current market and adapted for new Panamax vessels
  - Operating costs - from OSC database
  - Bunker prices - analysed on the the basis of current prices (increases will favour all-water option)
- Voyage/service shipping cost calculation - basis weekly service and typical port rotations
- It is assumed that the largest possible vessels will be deployed
- Also, ULCS vessels will be deployed on some Transpacific and Suez routings.

A dynamic approach is taken to contrast the most likely situation from 2015

Panama May 2007
Cost Sectors and Outlook III - canal costs

• A controversial sector:
  - Costs have increased significantly and will continue to do so to pay for the expansion
  - In reality, an increase of more than 100 per cent (in real terms) can be anticipated and will be necessary

• Are these costs sustainable and will they damage the market position of the Canal for the container market?
  - Analysis indicates that the total role of these costs in the through-transport chain is not a major constraint
  - There could be scope for further increases (on a selective basis) beyond anticipated levels

Within anticipated range, volumes will not be price sensitive for arterial trades, but there may be implications for lower volume services

Panama May 2007
Cost Sectors and Outlook IV - intermodal costs

- Inland costs are critical for the West Coast v. All Water calculation
  - Charges have increased rapidly and remain under pressure
  - In reality, a real cost increase of 20 per cent can be anticipated by 2015 - it could be much more
- Historically, transport times have been shorter, but intermodal capacity constraints are damaging efficiency
- Scale of investment to fix the problem (lines and yards) is enormous - little sign that this will be forthcoming
- Environmental opposition is mounting, especially in California
- The PNW option is less congested and will be competitive for some trades

*Much higher intermodal charges and a lack of capacity will favour the all water option.*
Shanghai to Chicago - current situation

- There is very little to choose in cost terms between the costs of containers reaching Chicago via Los Angeles or via the Atlantic. Norfolk is somewhat cheaper and New York records a higher charge.
- The level of local demand in California and the East Coast makes each routing effective and there is a balance between the different options.
- The Pacific NW option (Vancouver) is highly competitive and will increase share, but this will remain a fairly minor secondary alternative.
- The Suez option is not competitive for Shanghai containers, but does play an economic role for shipments from Southeast Asia.

Panama May 2007
Shanghai to Chicago Transport Costs Using Current Largest Vessels - US$ per 40’ container

Panama May 2007
The role of LA/LB as intermodal gateways will have been severely undermined by cost increases and the revitalisation of the all-water option.

The Panama routing with its NPX vessels will be highly attractive for the Atlantic coast and Midwest markets and will record very competitive cost structures.

This will have been achieved despite increased competition from ULCS vessels on the Suez and Transpacific routes.

The position of the Panama alternative will also be competitive versus the Pacific Northwest.

From an underlying cost perspective, the Panama option will be highly attractive and increase market share except for highly time-sensitive cargoes.
Shanghai to Chicago Transport Costs for 2015 With Largest Vessels - US$ per 40’ container

Panama May 2007
Shanghai to Chicago Forecast Transport Cost
Evolution to 2015 - US$ per 40’ container

Panama May 2007
Sensitivities and Issues - potential downsides

- The relative position of the Panama All Water option will be the cheapest alternative for shipments from China to the East Coast and Midwest. There are some uncertainties, however:
  - Any major delay in improving East Coast ports will postpone the maximisation of the Panama’s market role. However, Halifax, NY/NJ and Norfolk will be available and other ports have deepening plans. Also, use of Caribbean hubs will boost the position.
  - There could be a competitive response from California. Given the labour structure and mounting environmental opposition this will be difficult.
  - Intermodal investment could be stepped-up. Once again, this is seen as unlikely - capacity will be constrained and schedules suffer.

*It is unlikely that the core identified cost advantage will be undermined. Even with 8500TEU vessels the advantage is clear.*

Panama May 2007
Sensitivities and Issues - potential upsides

• There are market developments that would further favour the new All Water option:
  - There might be scope to increase the capacity of the New Panamax vessel - this would further boost competitive edge
  - If fuel prices rise much higher, then the costs of the all water service become even more advantageous
  - There will be scope to combine Asia-Atlantic services with Round-the-World operations - further boosting load factors

OSC have been cautious in modeling future costs - the true All Water advantage could be considerably higher
West Coast Implications I - Pacific Northwest

- **Advantages:**
  - Shortest haul to East Asia - likely strongest growth sector
  - Spare capacity in Canadian intermodal links to east can be tapped by selective upgrades and additions to rolling stock
  - Relatively deep water
  - Capacity expansions underway and planned

- **Shortfalls:**
  - Environmental opposition at very high levels
  - Vancouver especially faces delays
  - Fragmented demand
  - Much smaller local market than California

*Has the PNW missed its chance for a dominant position as All Water fights back?*
West Coast Implications 2 - California

- **Advantages:**
  - Huge and growing local market
  - First-choice port range for most transpacific trade, providing capacity is available
  - Relatively deep water, and further deepening in progress
  - Significant scope to increase capacity by lifting productivity and land reclamation

- **Shortfalls:**
  - Intermodal capacity constraints
  - Environmental opposition to further terminal development
  - Costs of port transit very high

*These forces are likely to conspire to undermine California’s market share versus a revived Panama option*
East Coast Implications - an advantageous position

• Advantages:
  - massive local demand, but growing more slowly than US average
  - NY/NJ dredging programme to handle larger vessels finally underway,
  - improving intermodal links with Midwest
  - Panama Canal expansion will boost demand
  - stevedoring charges cheaper

• Disadvantages:
  - Could lose market share in the near term
  - further intermodal investment required - especially for southern ports
New Panamax Volume Deployments from 2015

- Asia-USEC
- Round-the-World
- Europe extension
- High volume feeders
Conclusions - scope for market share increase

- The new Panamax dimensions will radically alter container market structures
- The share of Atlantic ports in the North American market will increase from around 43 per cent in 2006 to at least an estimated 53 per cent in 2020
- Essentially, this represents a reassertion of the relative situation in the late 1980s/early 1990s
- There will be further possibilities to leverage market share by the development of RTW and complex service extensions to the core Asia-USEC trades

The cost differentials between NPX and ULCS tonnage will be quite limited. There will be a key issue between the flexibility of ordering an NPX vessel and the somewhat cheaper slot costs for the larger units. Also, the current large vessel sector (post-Panamax) is likely to be undermined by the shift to larger vessels.
Impact of Panama Canal Expansion on Asia-North America Container Trades

Andrew Penfold
Director, Ocean Shipping Consultants Ltd.

Panama, May 2007

www.osclimited.com