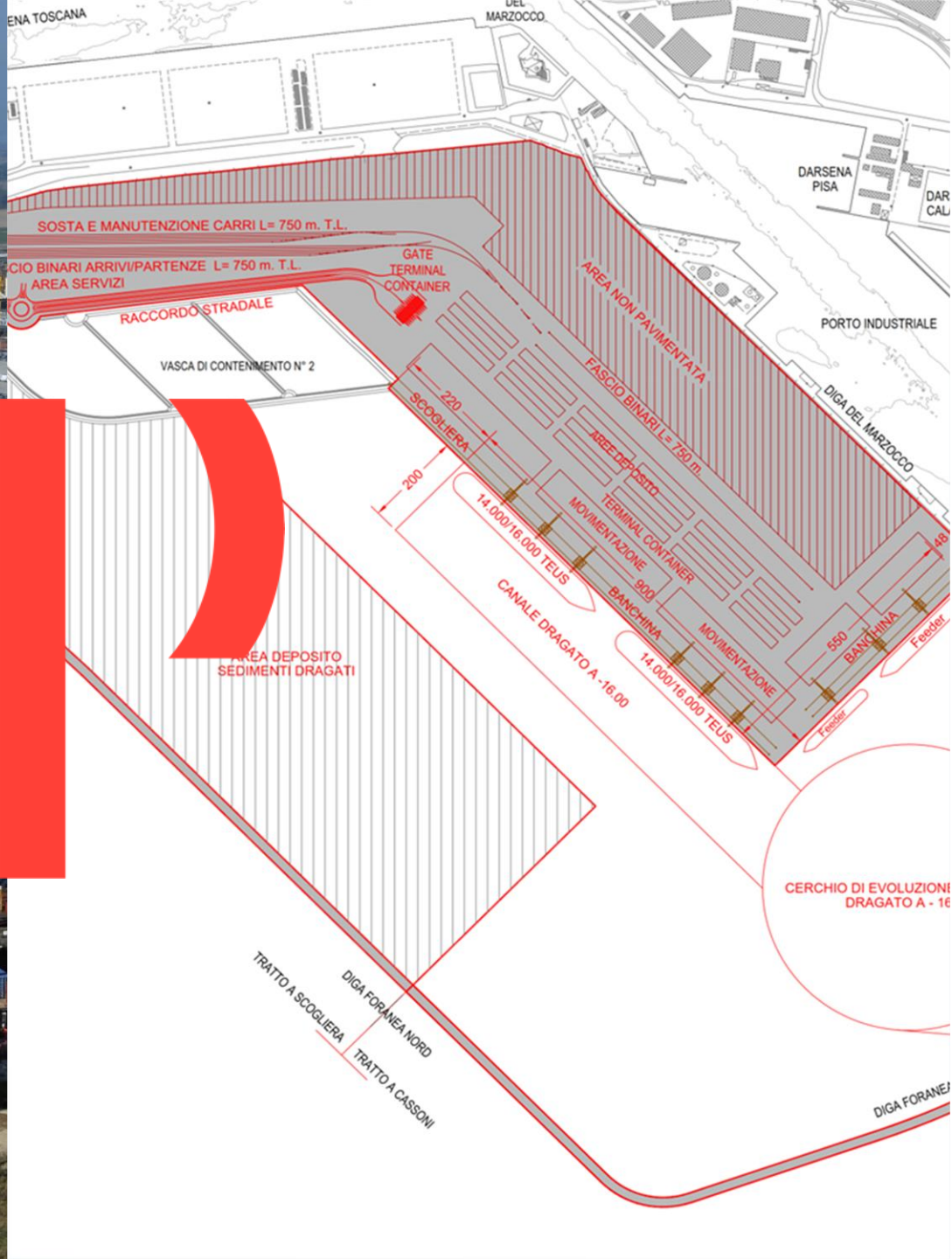




Smart Money – Investing in Maritime Infrastructure – A Discussion Document

Livorno, 18th April - Gerry Cairns, Associate Director Maritime



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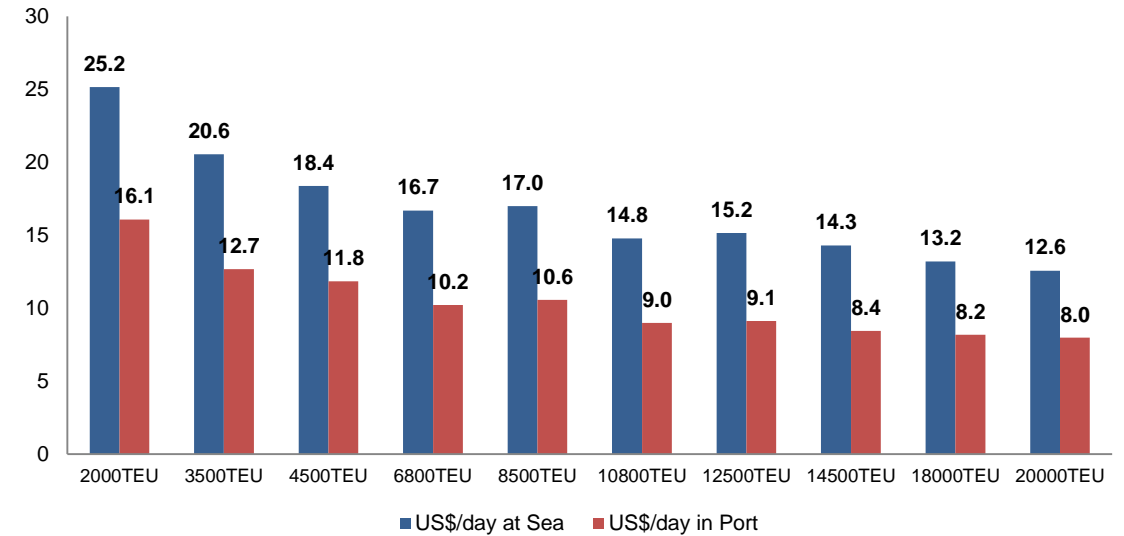
What is creating the need for investment?

INCREASE IN DEMAND

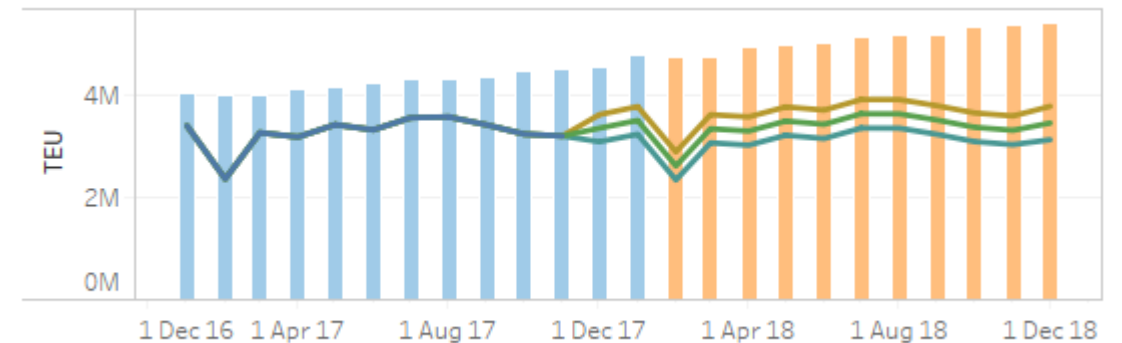
Increase in demand but continuing short-term increase in supply limiting line's profitability until global Supply/Demand is balanced.

- Global demand continues to expand, but Global supply (vessel capacity) continues to expand *ahead* of demand.
- Vessels continue to increase in size, but there is a limit to growth.
- It is extremely likely that the benefit of increasing a vessel from 20,000TEU to 22,000TEU capacity will only result in a combined “at sea” and “in port” benefit of US\$0.6/TEU and further combined “at sea and in port” diminishing returns of US\$0.4/TEU for vessels of 24,000TEU capacity.
- Despite this, it happens – economic rationale is only one factor in deciding future ship size – and so terminals must be ready for bigger vessels.
- The increasing difficulty of ensuring that the vessels are fully utilised in order for lines to enjoy the benefits of scale, coupled with physical and hinterland challenges suggests that vessels are unlikely to grow beyond 24-26,000TEU capacity in the future.
- Alliance structure likely to change as/when single lines can fill biggest ULCSs on their own, or when the market recovers – Alliances are essentially defensive.

Container Ship Scale Economies (US\$/FEU)



Global Supply/Demand



CONTAINER SHIP SIZE DEVELOPMENTS

Of the main shipping lines serving the Baltic, i.e. Maersk, MSC and CMA-CGM are all committed to order more new vessels >10,000TEU. Maersk's order book includes an average vessel size of >14,000TEU.

Rapid developments with regard to size of container vessels. MOL Triumph of 20,170TEU was the largest vessel, but has since been replaced by the OOCL Hong Kong with 21,100TEU capacity.

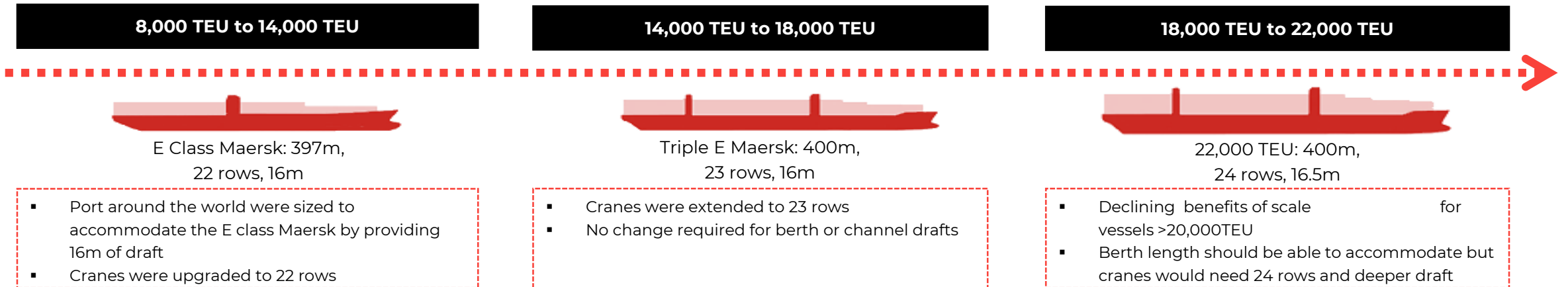
The focus of attention for ULCSs is for all vessels >11,000TEU. Smaller vessels in this size range are already being regarded as mid-size . ULCSs fall into three distinct categories:

- 11,000-14,500TEU – include new Panamax vessels and older post (old) Panamax designs.
- 14,500-18,000TEU - dominant category of ULCSs already delivered.
- 18,000TEU+ - largest vessels in planned fleet.

Integration of secondary trade lanes with major East-West services with an increase in direct calls at main regional t/s hubs designed to help to increase the vessel utilisation.

Current and Potential Container Vessel Sizes

	TEU's	LOA (m)	Beam (m)	Max Draught (m)
Maersk "EEE"	18,270	400	59.0	15.5
CSCL/UASC vessels	18,400	400	58.6	15.5
MOL TRIUMPH	21,700	400	58.8	16.0
New Generation I	22,000	400	59.0	15.5
New Generation IIA	24,000	450	59.0	15.8
New Generation IIB	24,000	450	61.5	16.5



“CASCADE” EFFECT

Vessels are regularly being deployed on services ahead of demand.

1

The increase in the size of vessels deployed on the main arterial lanes has resulted in a displacement of the vessels that were historically dominant on the Asia-Europe routes, i.e. 6,000-8,500TEU+ capacity vessels to secondary trade lanes.

2

Vessels that were deployed on the main trade lanes have now been “cascaded” to secondary trade lanes, ahead of the demand. There is a general upscaling of vessel capacity ahead of global demand, driven by the main shipping lines.

3

Smaller ports are no longer able to handle main trade lane vessels and instead must rely on secondary trade vessels and feeder/short-sea services.

4

Displacement of 1,000-1,500TEU vessels by 2,500-3,500TEU vessels on feeder/short-sea services as a result of an increase in incidence of trans-shipment in the region.

5

With the formation of the new alliance structure, there will be a reduced number of service alternatives available to each shipper. This makes it even more important for ports to be able to handle their cargo efficiently, so that they don't lose services to other facilities desperate to handle the volume.

CHANGING PORT REQUIREMENTS

Terminals need to be able to handle bigger vessels if they are to compete as direct mainline calls on main arterial trade lanes.

Longer, Deeper, Stronger

- Ports with sufficient water depth / facilities have seen the average and maximum vessel sizes increase. Other ports have stagnated around feeder vessel types.
- Terminal productivity has increased – but there remains a need for further improvements to “world” levels. Bigger vessels call at fewer ports and need to be turned around quickly.
- Need for dredging – approach channels and berths. Depth alongside is critical to ‘future-proof’ terminals.
- Longer berths; larger terminal area; increased gate pressure.
- Larger/heavier quay cranes - longer reach; taller clearance; twin/tandem lifts.
- Increase in load on quay structures and increase in electrical loads and electrical infrastructure.
- New deepwater facilities will be attractive as alternative t/s hubs with higher % of gateway cargo.
- Terminals which do not improve productivity will see market share decline.
- Need to improve hinterland links and connectivity.



What form could the
investment take?

WHAT FORM COULD INVESTMENT TAKE?

Physical

- Pay to expand an existing facility or to develop a new one?
- Pay to dredge the channel or turning circle to allow access for bigger vessels requiring deeper water.
- Pay for new and bigger STS gantry cranes with wider reach.
- Pay to strengthen the quay.
- Pay to increase the terminal area to provide more stacking spaces for an increase in the number of units handled.
- Additional electricity requirements.



Who should be investing?

WHO SHOULD BE INVESTING?

The concession process:

- Terminal operators / Port Authority
- Private equity firms / investors
- Shipping Lines
- Other (minor interest): Rail providers; Toll roads

▪ The classic case has seen investment split as follows:

- I. Marine works = state;
- II. Terminal works = private investment;
- III. Infrastructure = state.

▪ Is this sustainable? In the future, there is likely to be further private investment. Terminal operators recognise the need to be able to clear the terminal quickly and some have started to look at investment to facilitate oncarriage of units.



PROCESS OF CONCESSIONING

How to align the different interests of the PA and the CH is key

The Port Authority PA is typically looking to:

- Increase volumes and increase productivity.
- Modernise operations.
- Maximise financial returns.
- Increase broader benefits to the city / state.
- Minimise financial commitments.



The Concession Holder CH (or bidder) seeks to:

- Maximise profitability.
- Possibly fit into a broader strategy.
- Possibly serve their own market needs (if line-owned).
- Limit competition.



What are the risks of
investment?

WHAT ARE THE RISKS OF INVESTMENT?

Port Authority Perspective

The risks and possibilities for the PA:

- The PA must realise it needs to actually *sell* its project.
 - The PA must establish realistic expectations of project value. This means developing a market model and defining possible profit levels for inward investors.
 - The PA must develop an informed understanding of ‘country risk’ and anticipated required IRRs for investors.
 - The PA must not over define the project.
 - The PA must decide the type of operator it is looking for (shipping line or stevedore?).
 - Counter Party risk – full analysis essential with ‘what ifs?’.
 - Must offer guarantees about allowed further investments (this is very important).
 - What happens in the final years of the concession?
 - Concession offers PA opportunity to direct the market e.g. can insist on clauses related to modal share, productivity, trans-shipment Vs. import/export balances, etc. Can be tempting to over-direct the process.
- Revenue definition – up front payment, per container tariff, land rental, etc.
 - The PA will look for volume and revenue guarantees which may (on the surface) favour a shipping line.
 - The PA will look for volume and revenue guarantees which may (on the surface) favour a shipping line.
 - Primary motivation is (of course) financial return, but there is usually a much bigger picture.
 - What is the Concession Holder looking for?
 - Location in relation to markets
 - Physical capabilities of the terminal
 - Supporting infrastructure investment commitments

WHAT ARE THE RISKS OF INVESTMENT?

Concession Holder / Bidder Perspective

Political risks

This is a complex issue. Different investors show divergent appetites for risk. This will be factored-into expected returns.

Institutional stability

The CH will require certainty on introduction of further capacity. Trigger points for additional (competitive) concessioning must be agreed (and believed). The position with regard to future supply/demand balances must be clear.

Clarity at the end of the lease

This is more an issue for the PA, but option to extend can provide further certainty.

Flexibility in the arrangement

The CH is committing capital for a long time. The market will change in the period and the deal must reflect this. Essentially, this means a spreading of risk between the two parties. CH will look for realistic approaches and a dynamic approach from PA is central. Trigger points for phased investment are useful.

Financial stability – i.e. clear and stable rent and per unit charging

This is probably the most straightforward requirement and is primarily a matter for the initial legal agreement. It needs to be water-tight. Also clarity and commitments are required for other charges – e.g. pilotage, port dues, etc.

WHAT ARE THE RISKS OF INVESTMENT?

What can go wrong?

Many things can go wrong – but here are a few of the most common:

- *Unrealistic expectations of volumes / failure to correctly assess the market.*
- *Issuing other concessions that upset the balance.*
- *Failure to maintain level playing field (or perception of this).*
- *Excessive additional charges.*
- *Failure to appreciate partnership aspect.*
- *Failure to be flexible if market conditions change.*
- *Lack of definition of last year concession obligations can cause a danger of project run-down.*



WHAT ARE THE RISKS OF INVESTMENT?

Best practice

It's case-specific, but here are some pointers:

- *Align interests of the PA and CH.*
- *Define clear areas of responsibility.*
- *Develop 'gain sharing' by creative payments that boost volumes.*
- *Offer a secure investment environment for both parties.*
- *Recognise container ports are not utilities – market risk needs to be shared and understood.*
- *Offer a clear and defined supporting infrastructure programme.*
- *Develop a partnership – it's a changing business (e.g. vessel sizes, economic upsets) these will be manifest over the concession period.*
- *There must be flexibility on both sides.*



Thank you

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