

Optimisation of Transport Costs: What is first, the market or infrastructure? ©

XIX AAPA Latin American Congress of Ports
Manta Ecuador



Summary

- Ports' sector performance
- Evolving supply chain
- Regionalisation
- Foreland Regionalisation
- Private sector capital participation
- Opportunities – a concrete example

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How resilient an industry?

PORTS' SECTOR PERFORMANCE



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Today the focus is on the negative

- **World Bank:**
this recession was first decline in Global trade in 80 years.
- **IMF:**
first contraction in global GDP since WWII.

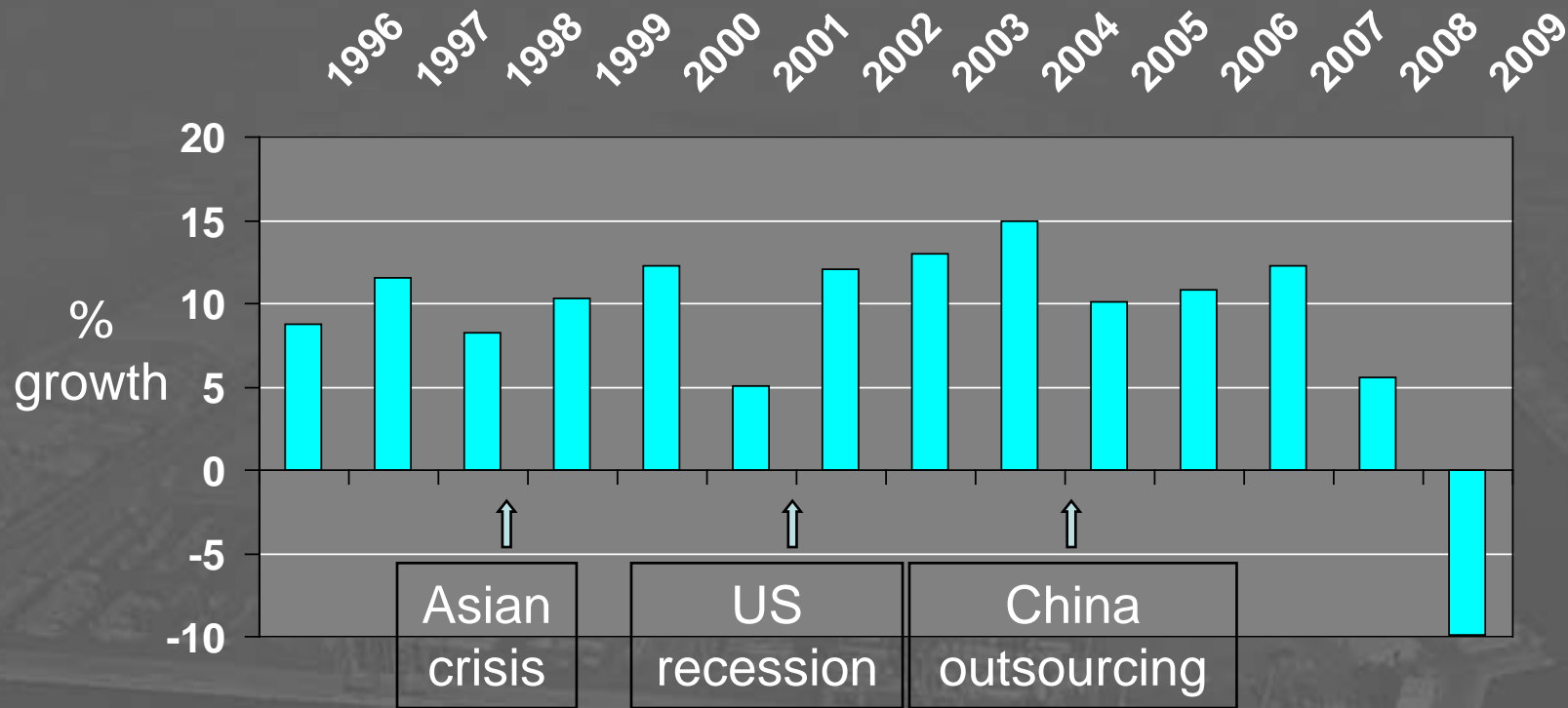


What happened?

- A restructuring of massive cheap debt and bloated organisations - but work out process well underway.
- Question: Have we been too harsh with the port sector though in our negative estimates and short sightedness going forward?



The industry's silver lining: Riding out recessions...



Source: Drewry Shipping Consultants Ltd

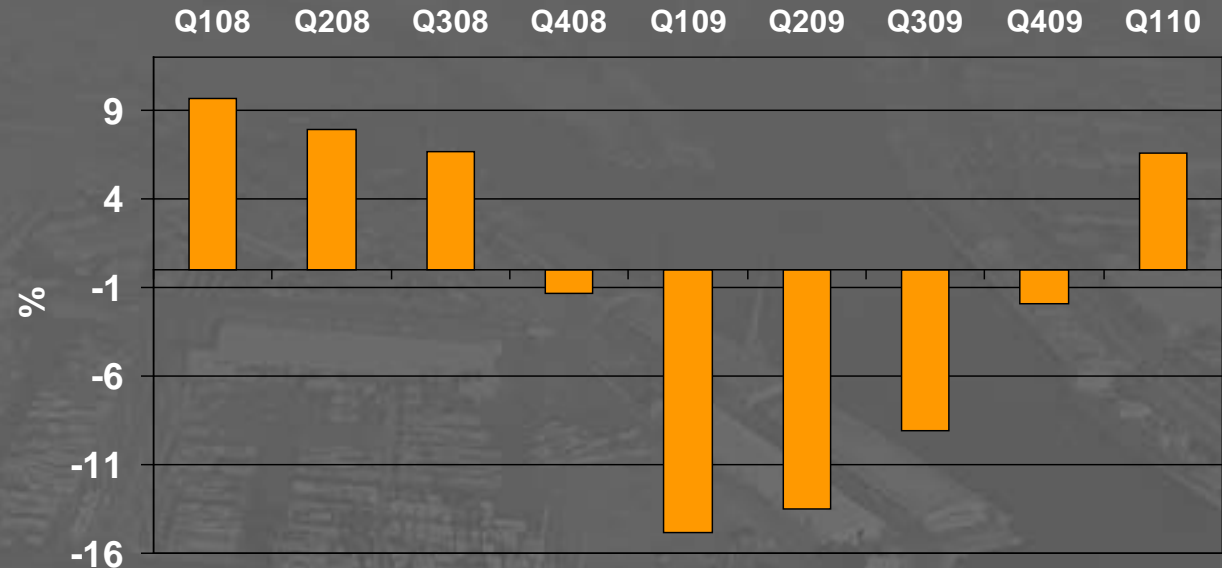
The global container port industry has shown resilience against recessions in the past – 2009 was different though; but its forecasted turnaround indicates a resilient sector.



Last quarter of 2008, first quarter 2009

- US sub-prime mortgage crisis hit mid 2007!
- Recession started to bite the last quarter of 2008 and hit hard in 1H 2009
- But the banking crisis in the second half of 2008 was the really critical factor

Quarterly global container port volume
Growth/decline

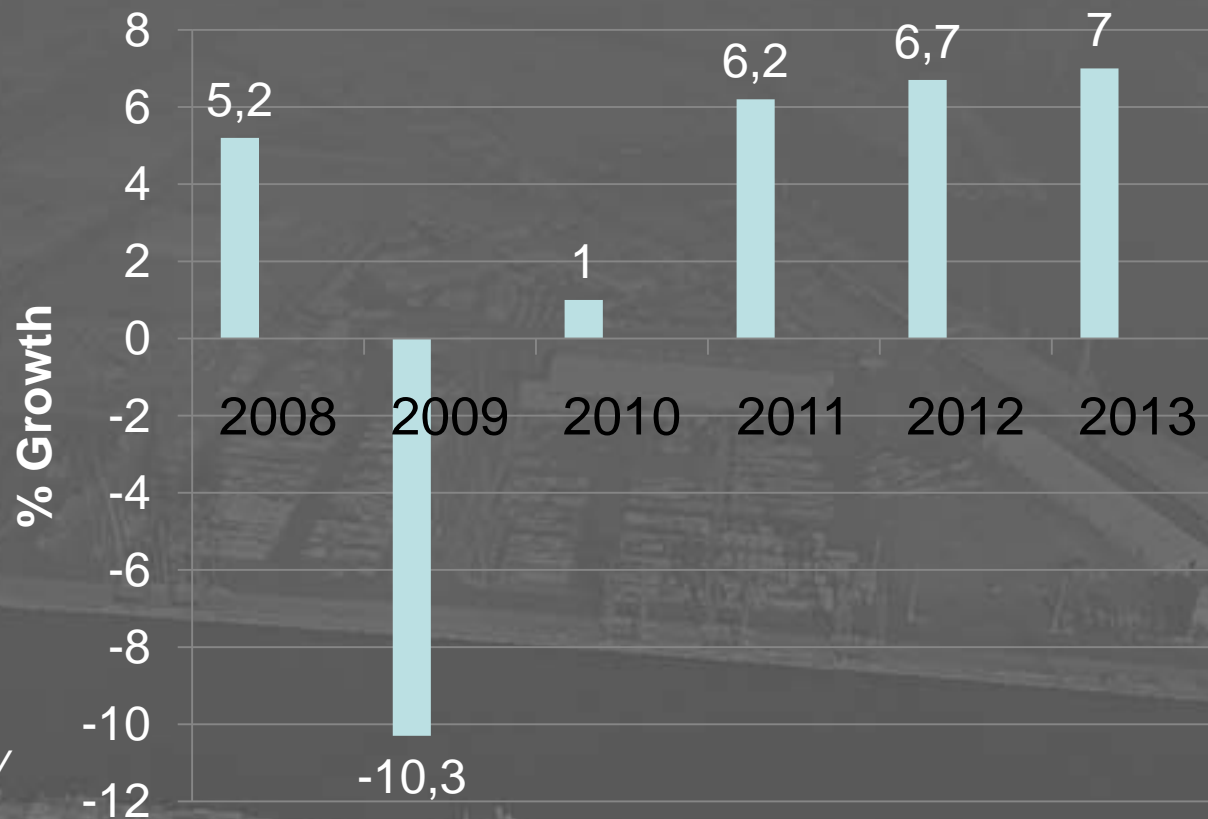


Source: Drewry Shipping Consultants Ltd



The port industry's resiliency

- 1982 worst year prior to this recession with 4.2% annual growth. By 2012 TEU traffic volumes will exceed 2008.

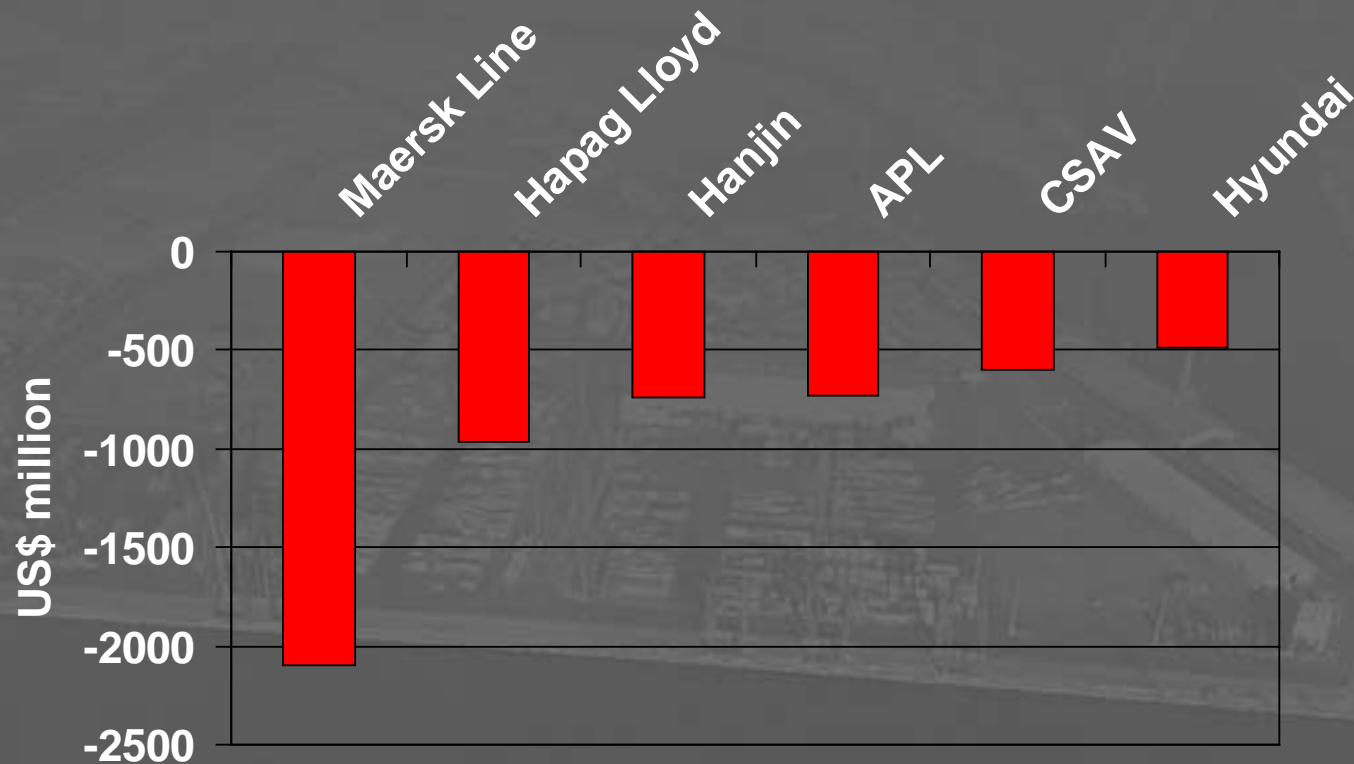


Source: Drewry

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Contrast with liner shipping margins – examples of 2009 losses

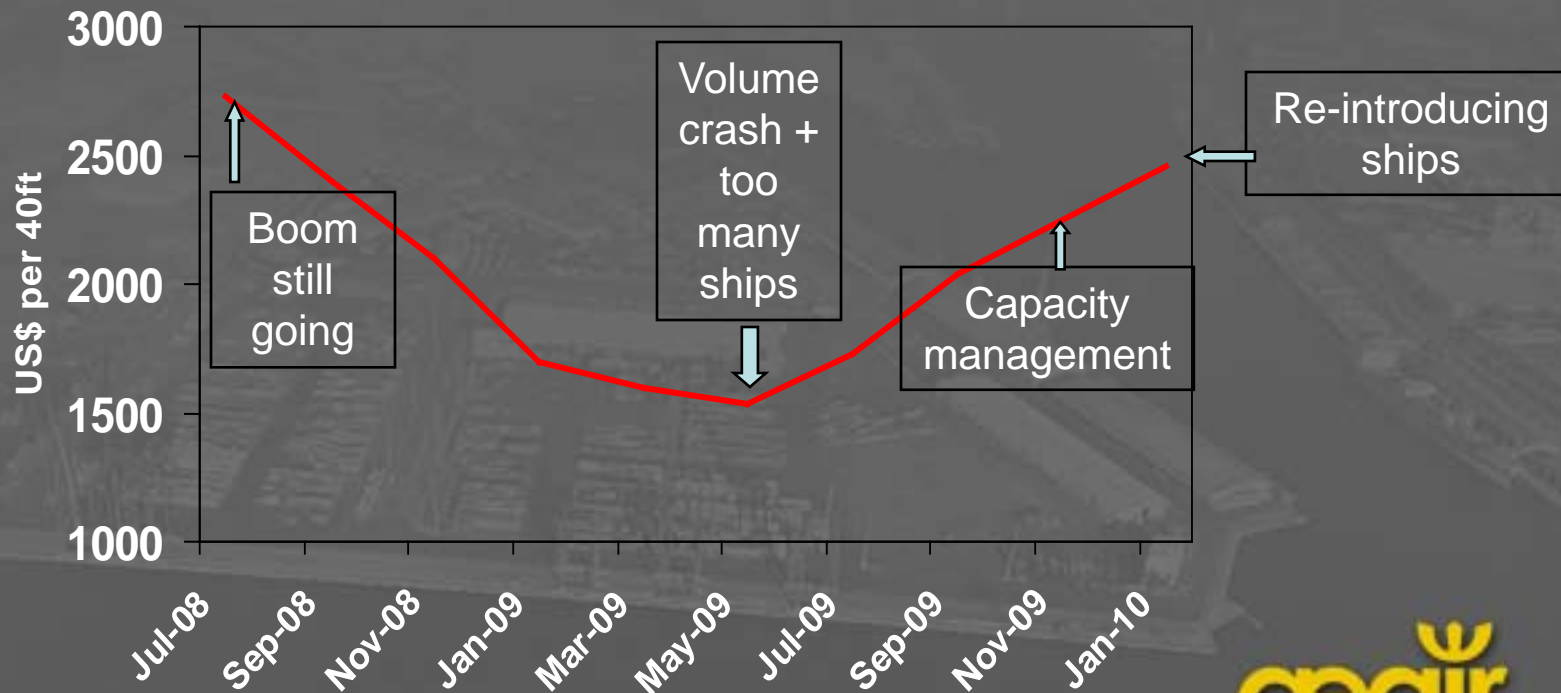


Source: Drewry Shipping Consultants Ltd



But freight rates recovering – for now...

Drewry Global Freight Rate Index



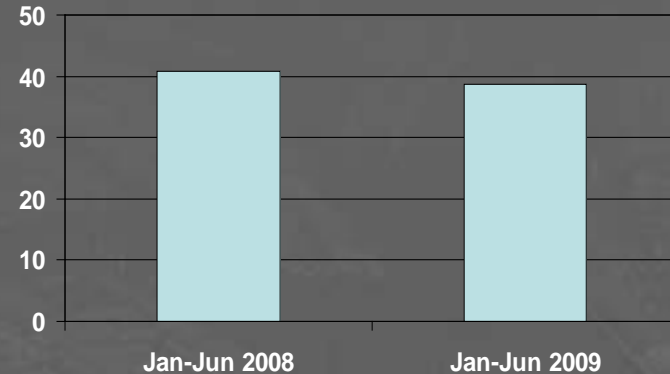
Source: Drewry Shipping Consultants Ltd



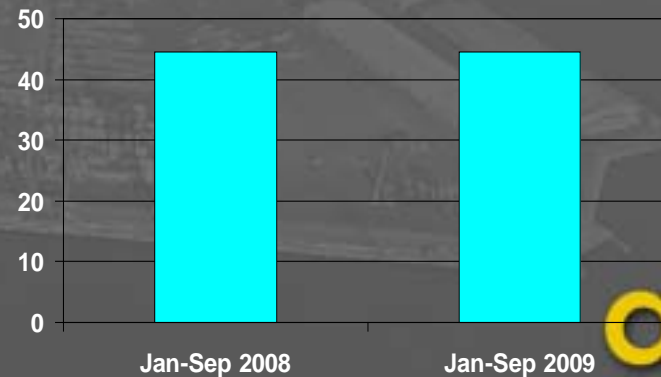
Defending container terminal profit margins

- Volumes, revenue and absolute profitability were down in 2009
- Margins were generally maintained though, e.g.
 - DP World
 - ICTSI
- A profit margin was still there – in the worst year the container port industry has ever experienced

DP World EBITDA % margin



ICTSI EBITDA % margin

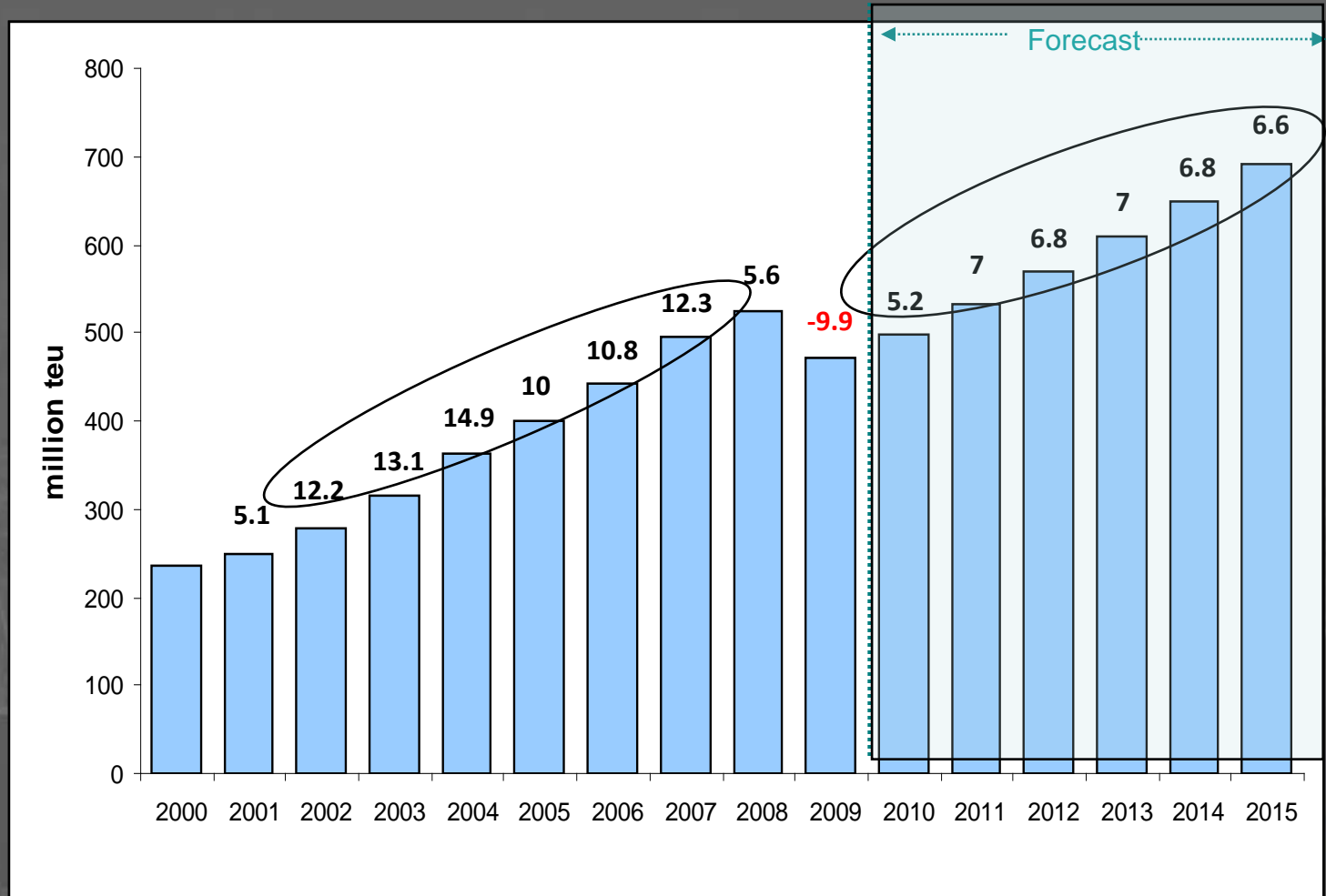


Source: Drewry Shipping Consultants Ltd

Forecast global container port demand growth to 2015: 3 year comeback - now that's industry resilience

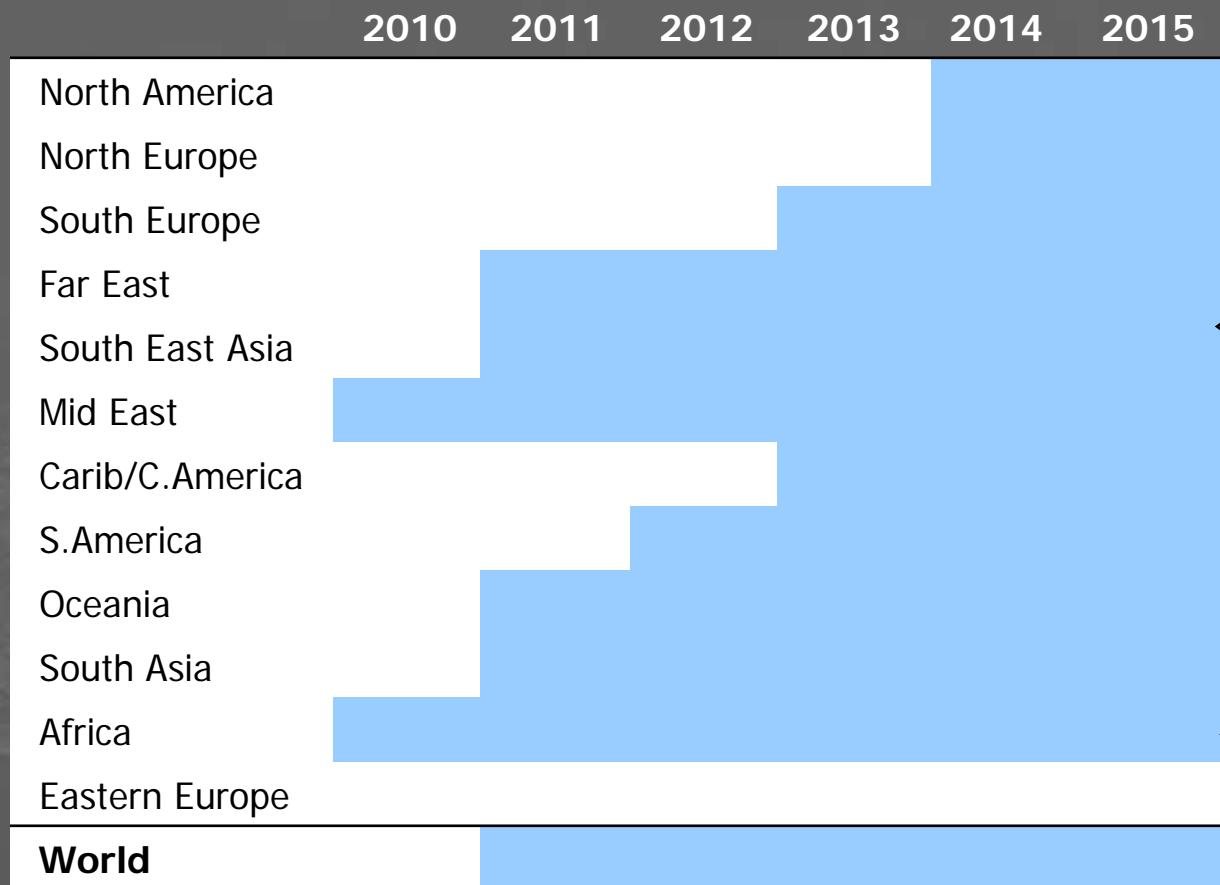
Numbers on top of bars indicate percentage y-o-y growth

What is the “new normal”?



Source: Drewry Shipping Consultants Ltd

Forecast demand highlights



Shaded cells show when throughput levels are expected to return to peak of 2007/08

Eastern Europe may be beyond 2015

Source: Drewry Shipping Consultants Ltd



Result

- Port industry very resilient.
- Also very capital intensive.
- And requires very long lead time to address market changes.



And the continuing need to compress it

EVOLVING SUPPLY CHAIN



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Growth in container ship size

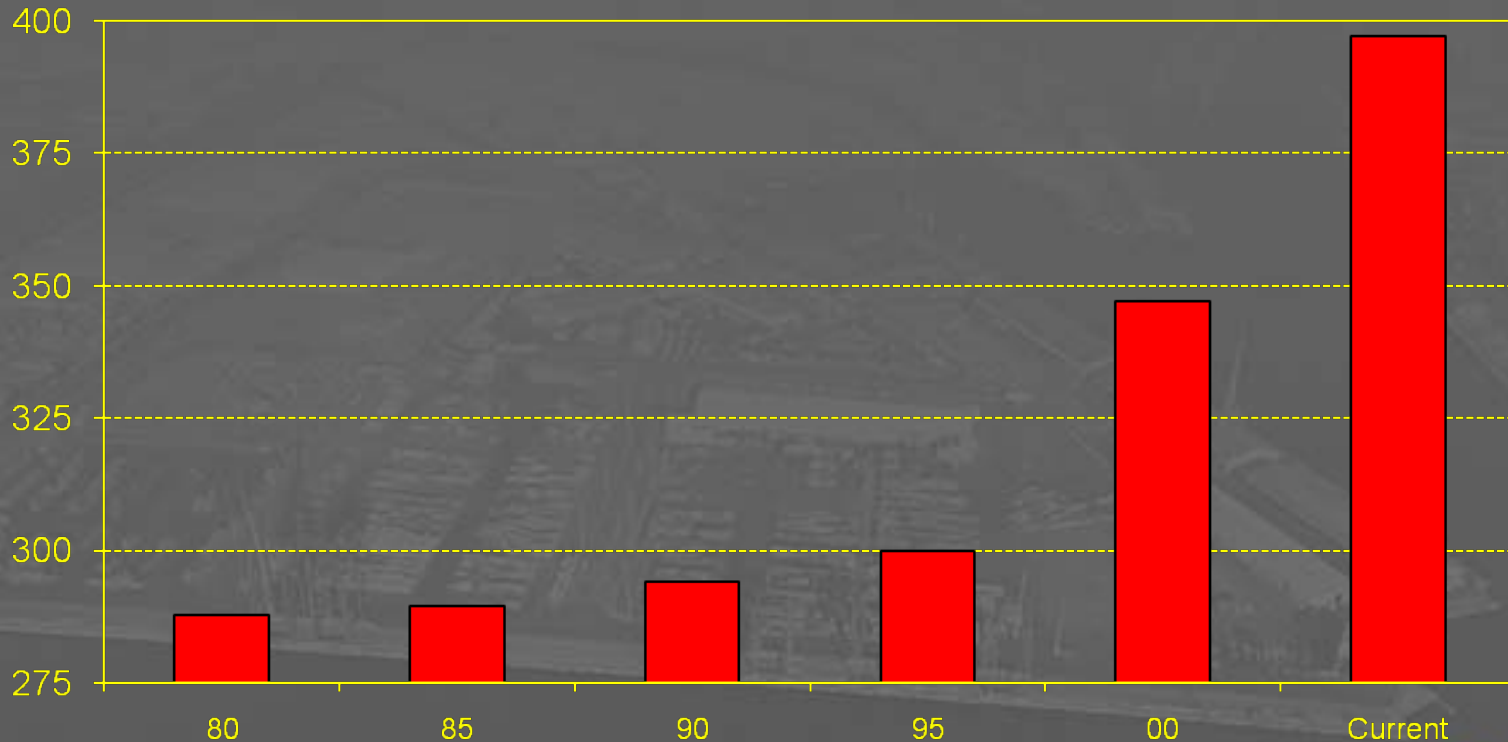
Year	Average ship size (teu)	Largest ship in world fleet (teu)
1980	375	3,057
1990	1,355	4,409
2000	1,741	7,200
Current	2,191	13,500+

Source: Drewry Shipping Consultants Ltd



Growth in containership size

Length (metres)



Source: Drewry Shipping Consultants Ltd

■ Largest Ship in Fleet



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Emma Maersk (PS) class



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Result: hinterland reach

- Big ships only work as part of a global network. They need to reach deep into the hinterland to be financially viable.
- Big ships are inflexible - could be a serious liability in a downturn; the bigger the ship the larger the risk.
- Big ships need deeper water, bigger cranes, longer berths, bigger container yards, in short – more port infrastructure and land in the port and throughout the logistics chain.
- Increased time in port can quickly outweigh economies of scale.

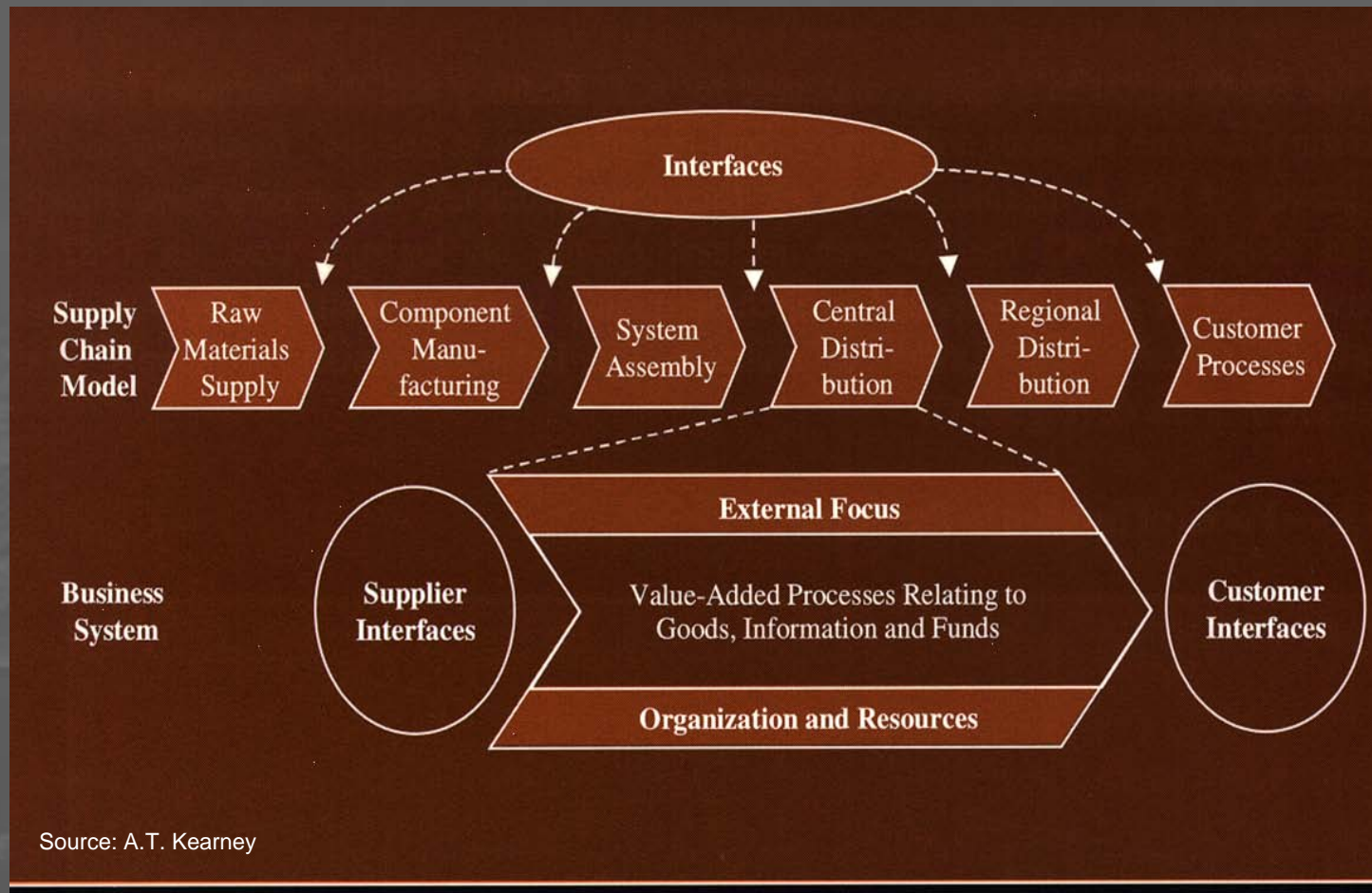


Port property – the new strategic asset

- 8,000 TEU ship requires 100 acres to keep container flow inbound smooth; most large ports are land constrained.
- Throughput per acre is key to making customers happy and money eg, in US about 4,000 – 5,000 TEU/acre yet in Europe and Asia 10,000 TEU/acre and higher is not unusual



Shortening the logistical supply chain: Requires intermodality and real estate



Evolution of a port

PORT REGIONALISATION



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Ports – now nodes in an ever expanding and integrating global supply chain

- Within present supply chain weakest link are ports and their inability to process more throughput.
- Just in time is now 'integrated time', requiring more specialised facilities such as 'fast buildings'.
- Property and its management at, near and related to ports is key to addressing these issues.



Regionalisation

- Ports will integrate into new freight paradigm (major impact on land usage).
- Inland distribution cost - now savings area as over water transport now a commodity.
- Constraints (political, ecological, economic) will force hinterland expansion and access
- All requires substantial use and need for real estate facilities



Regionalisation (cont.)

- Corridors and inland terminals – cornerstones in port regionalisation.
- Inland ports critical to in maintaining major seaport efficiency, attractiveness and competitive advantages (eg velocity/productivity).

(excerpts from: Notteboom T E, Rodrigue J E, 2005 (revised), Port Regionalization: Towards a New Phase in port Development, Maritime Policy & Management



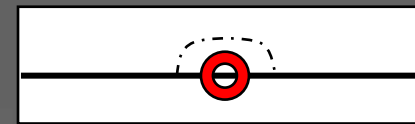
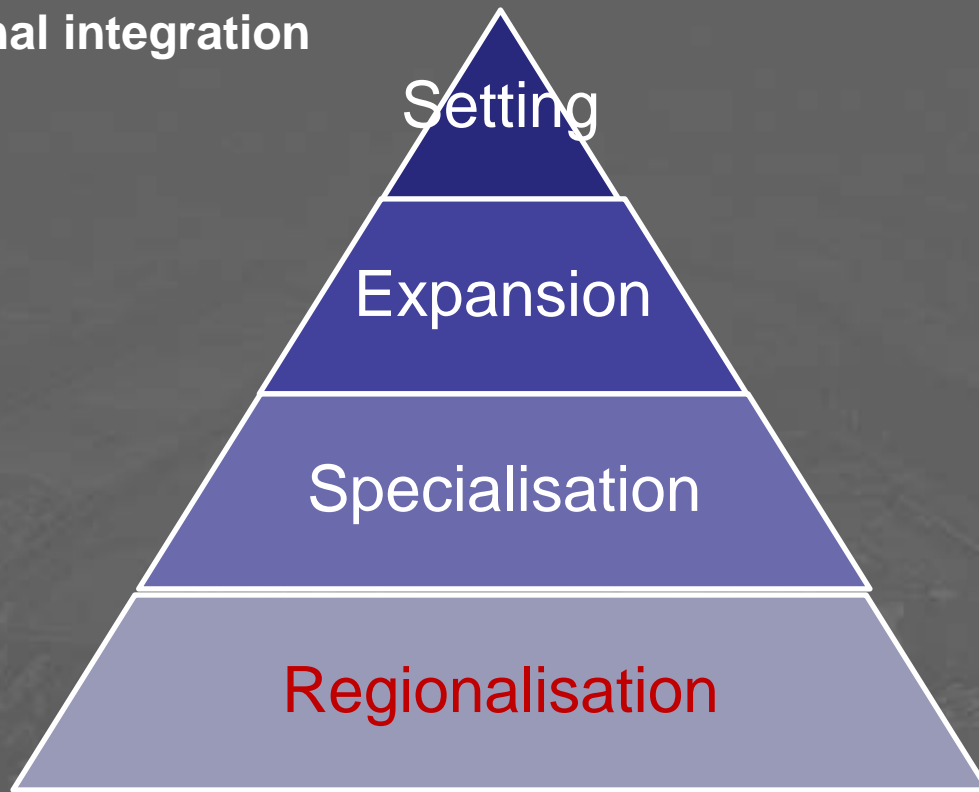
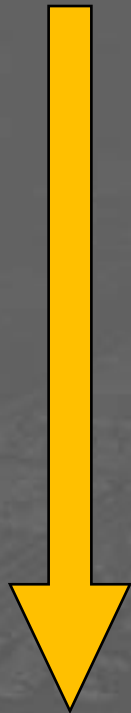
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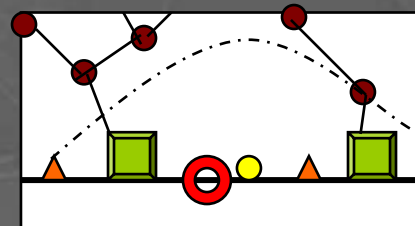
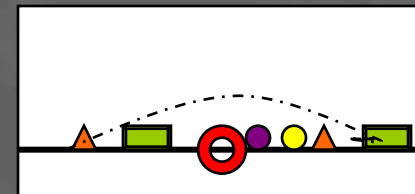
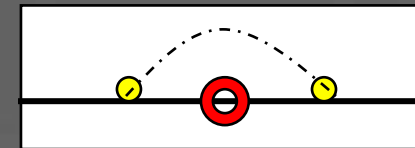
Regionalisation: heavily dependent on property

Level of functional integration



land

sea



Evolution of a Port

James Bird, Anyport, Notteboom, TE, Rodrigue, J P, Port Regionalisation: Towards a New Phase in Port Development, Maritime Policy & Management, 2005

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Port



Container



Bulk



Freight dist centre



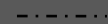
General cargo



Reconversion



Freight corridor



Urban area



Next phase

FORELAND REGIONALISATION

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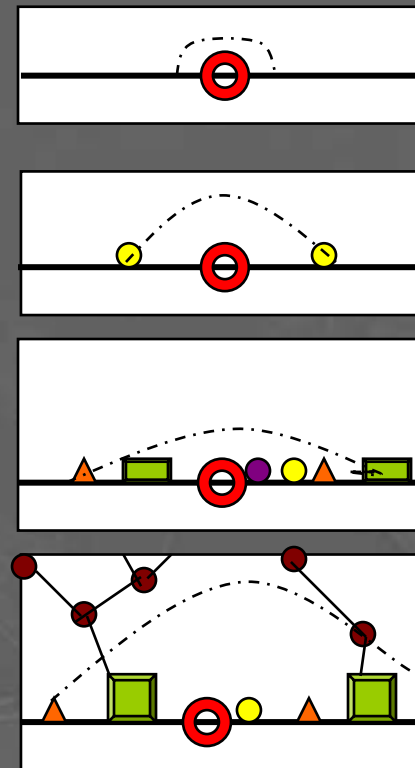
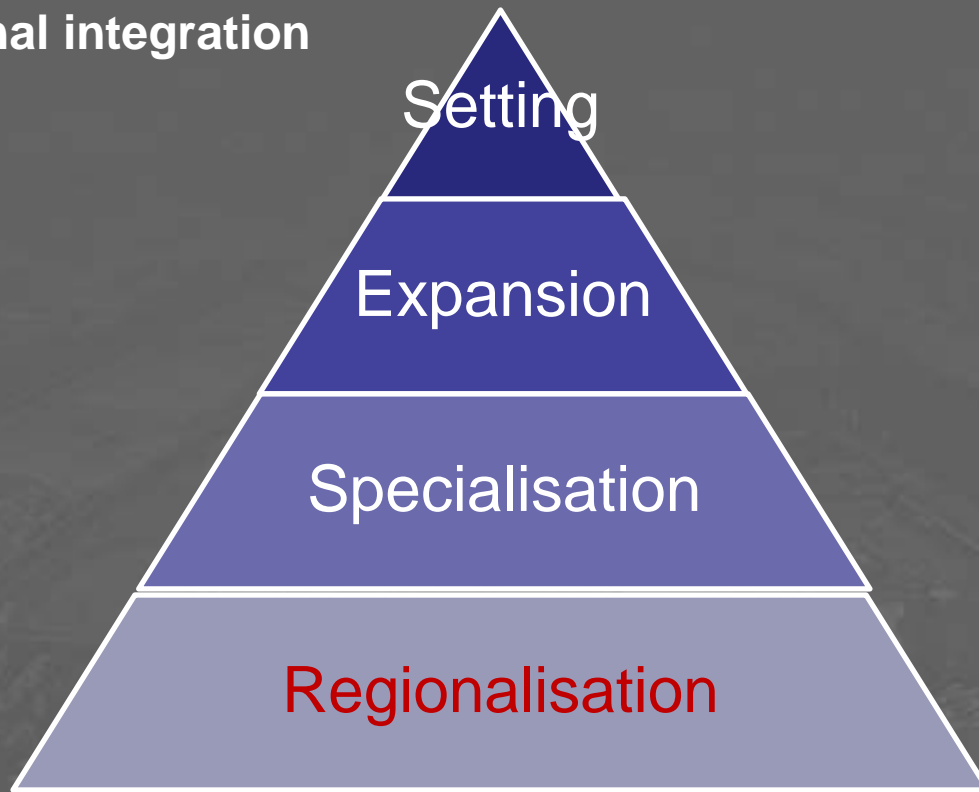
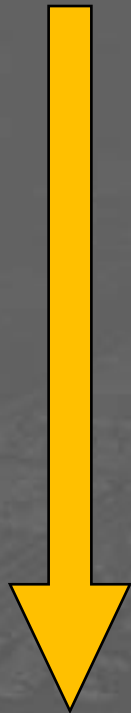
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Port



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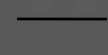
Freight dist centre



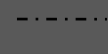
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Freight corridor

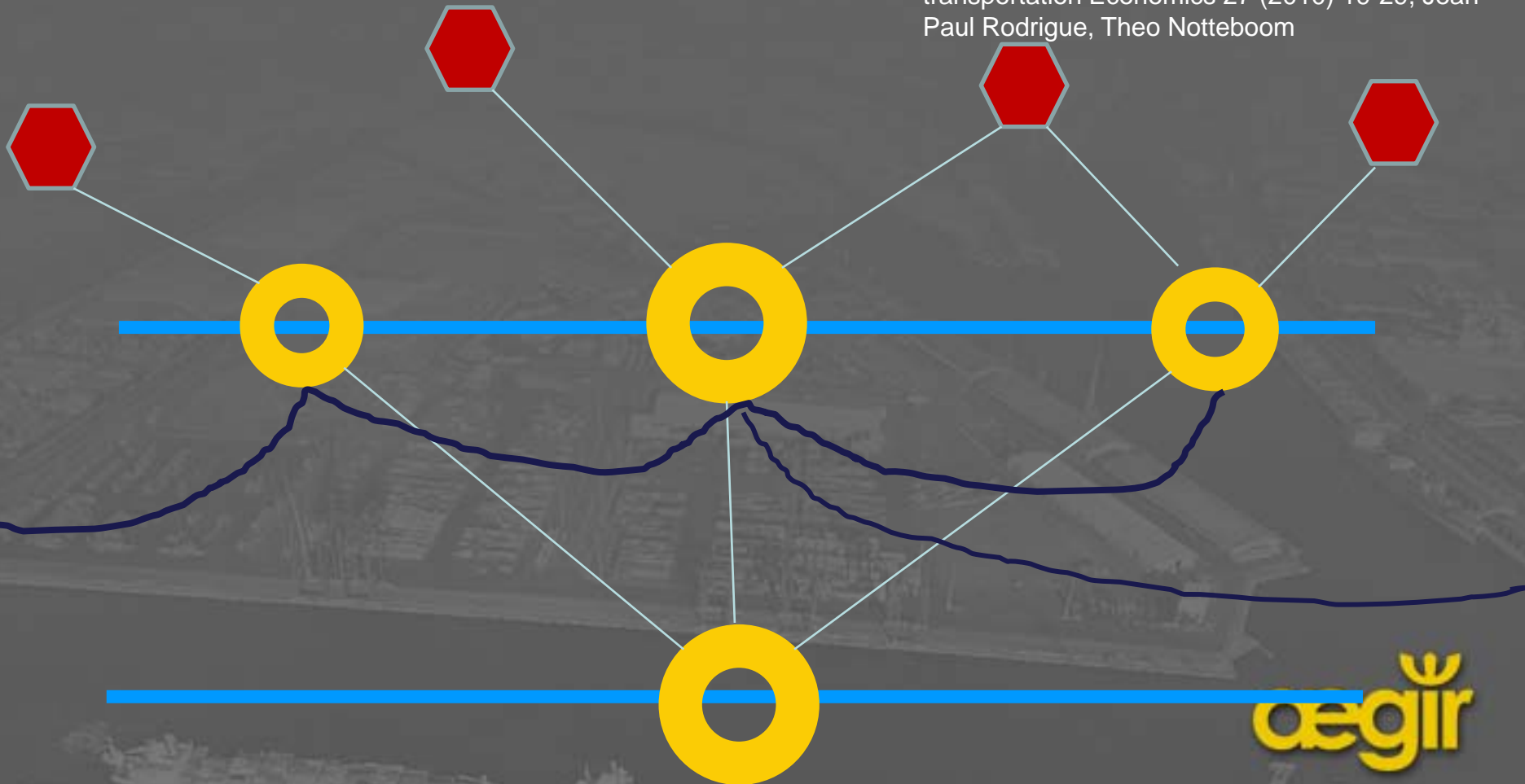


Urban area



Foreland Regionalisation

Fore-land Regionalisation: Integrating intermediate hubs with port hinterlands, Research in transportation Economics 27 (2010) 19-29, Jean Paul Rodrigue, Theo Notteboom



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Cooling off now but will come back with a vengeance

INVESTMENT DEMAND FOR YOUR PORT ASSETS



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Infrastructure trends and opportunities – the money is there

- OECD estimates **US\$70 trillion** required for **infrastructure development and improvement – 2030.**
- Average size of infra fund now US\$3.3b from US\$159m in '03; 'Dry Powder' for 2012 – US\$100b.
- Current financial crisis has resulted in less debt - opening door for more equity participation.
- Although assets are priced at more realistic levels there are also lower return (IRR) expectations as well in the 15%-18% from 18%-20% in the 2006-2008 period.



The interest by the sector for PPP's and direct investment is there...

- 'Private/Public financing of freight transportation infrastructure is a compelling need that is being inadequately addressed.'
Critical Issues Impact in the Freight Transportation in the Southeast Region, CIFTS, Issue 4 – Fall 2009



Comparative infrastructure yields with port investments

Asset segment	Risk	Avg cash yield (yrs 1-5)	Avg leveraged IRR	Capital appreciation potential
Toll roads	Low	4%-9%	8%-12%	Limited
Seaports	Medium	4%-7%	15%-18%	Yes
Merchant power stations	High	4%-12%	15%-25%	Yes

Source: JP Morgan



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Where ports and the private sector meet

OPPORTUNITIES – A CONCRETE EXAMPLE



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Opportunities

- Maximise port's value through land banks
- Create new revenue streams focused on value added activities
- Release tied up capital to expand/modernise port
 - Raise off balance sheet debt & equity with:
 - PPP – Public Private Partnerships
 - L-T ground leases
 - Build-to-suits



Opportunities

- Create port competitive advantages by:
 - Integration of hinterlands and port to shorten supply chain eg, intermodal platform
 - Address client specific needs for specialised RE facilities.
 - Develop specific use, non-traditional port properties eg, distribution, to support core business.

All of which are property based



Challenge for East coast load centres post Panama Canal widening

- Depth, bridge clearance and terminal capacity.
- Deep reach into the hinterlands.
- Efficiency, velocity and throughput requiring intermodal capabilities.



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Port property – intermodal and value added services

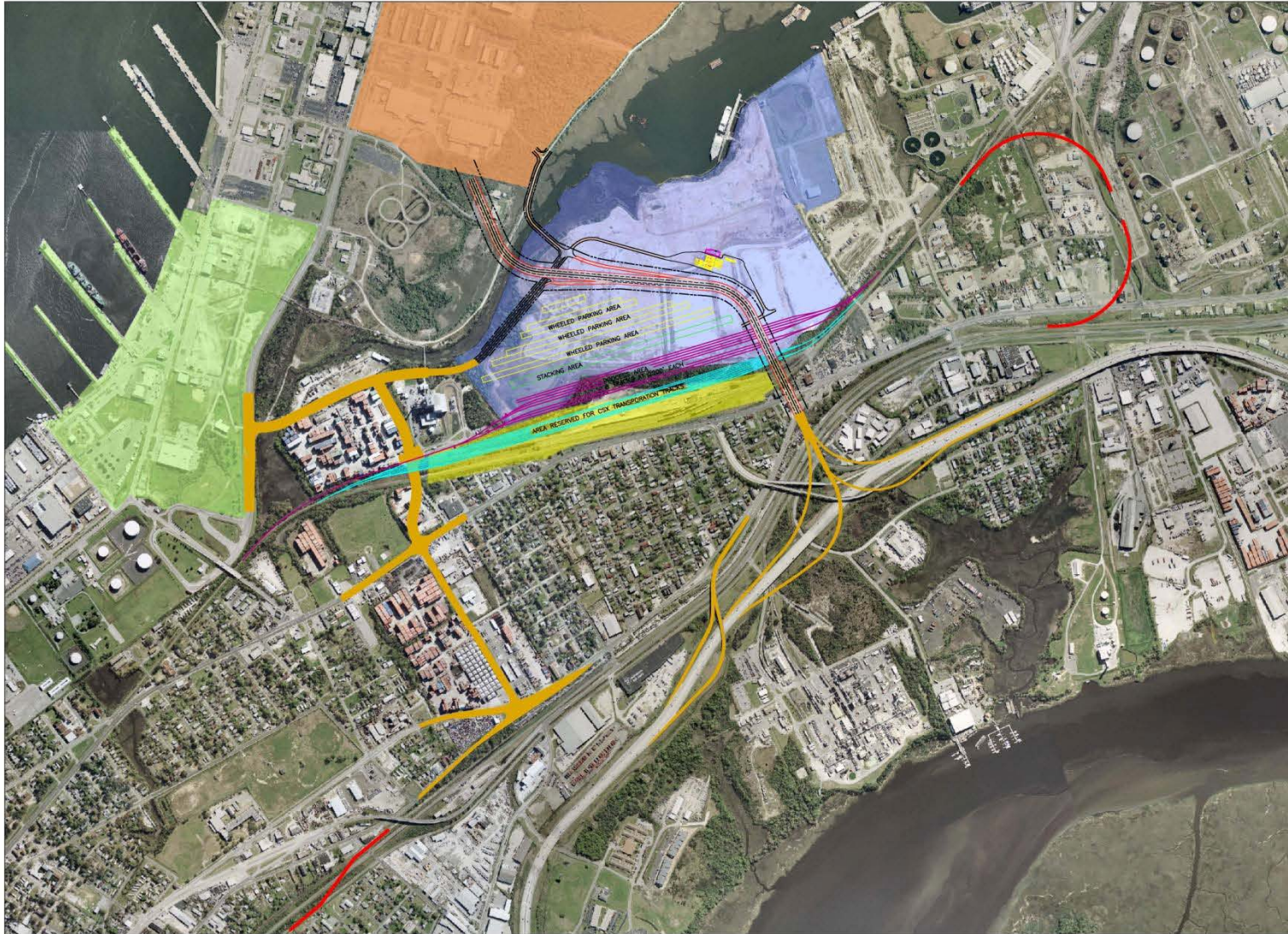
- As transport costs increase (fuel, manning, etc – about US\$ 50,000 to \$60,000/day for an 8,000 TEU ship), local, value added service become increasingly attractive to shippers – requires land and facilities.
- Intermodal capabilities increasingly critical for viability of port transport nodes and larger ships to access hinterlands deeper.



Charleston South Carolina



Intermodal Concept Charleston South Carolina



**Access Road Realignment
Bridge Alternative**

SCALE: 1"=400'-0"
DATE: 3/11/08
March 11, 2008

Private sector participation in this case:

- Private sector can deliver imperative competitive advantage to a port.
- Both projects represent an investment in excess of US \$600m, which will not have to come from either the port's or state's coffers or balance sheets.
- Projects will have largest positive ecological impact on the region.
- Will create the platform necessary for a viable gateway port.



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Conclusion

Once building infrastructure before market demand would create it – there is far too much capital required, planning and development time to do this without far too much risk now.



*'Navigating the World of Port Properties –
To Maximise the Value of Ports'*

Thank You



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