

Infrastructure, sustainability and logistics challenges in Latin America & the Caribbean©

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Summary

A fast paced coverage of:

- the market;
- LATAM infrastructure challenges;
- looming changes in how port authorities will be structured;
- the role property plays and should play at ports; and
- an assessment of 'life and the universe' in the world of ports today.



Agenda

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- Where is the market; where is it going
- Latin American infrastructure logistics issues and challenges – Example: Brazil
- Port challenges and opportunities; prospects of corporatisation; potential for privatisation
- The role of port real estate
- Conclusion
- Questions & answers



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Market review

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- Five year regional container demand forecasts
 - Where will the growth be?
- Breakdown of current terminal capacity
 - What is a “typical” terminal today?
- Forecast development of terminal capacity
 - Where is the investment taking place?
- Ship size trends and productivity challenges
 - What effect is ship size development having?

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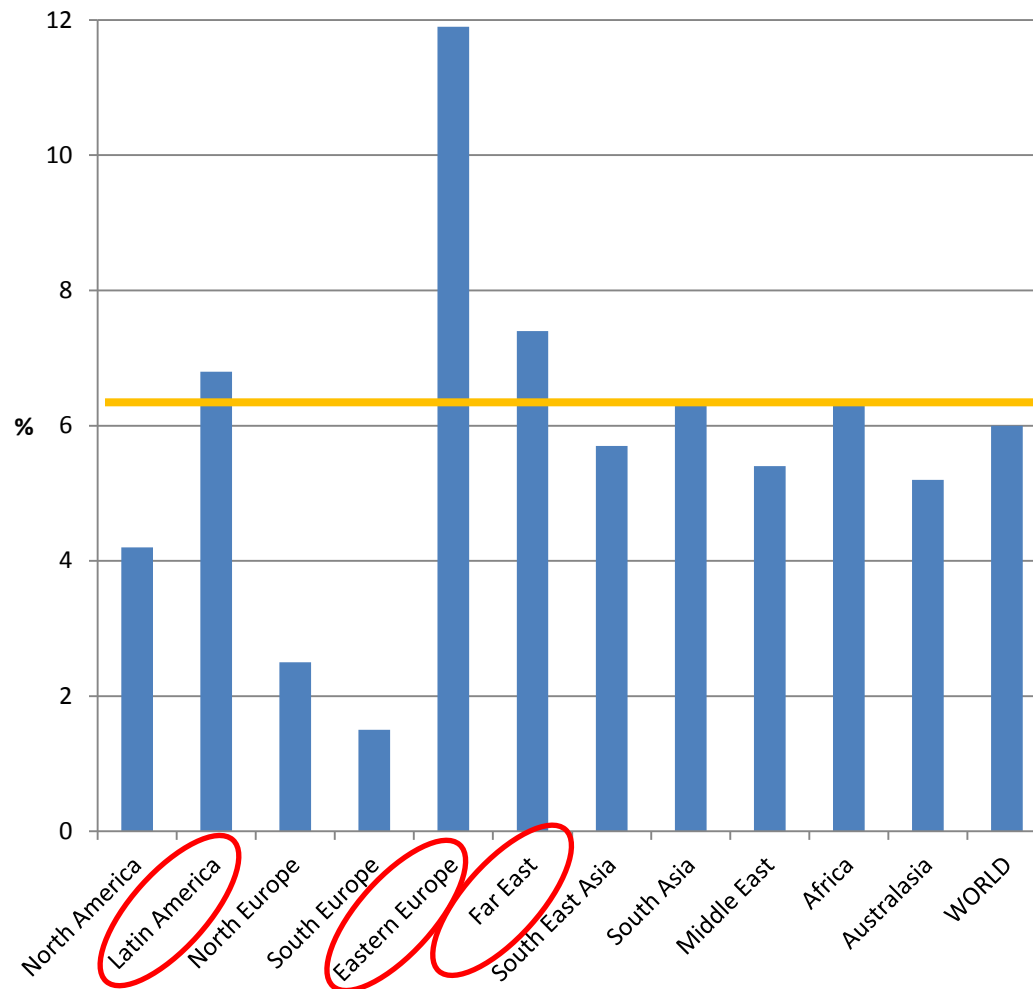
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Forecast container demand growth to 2017 (average growth p.a.)

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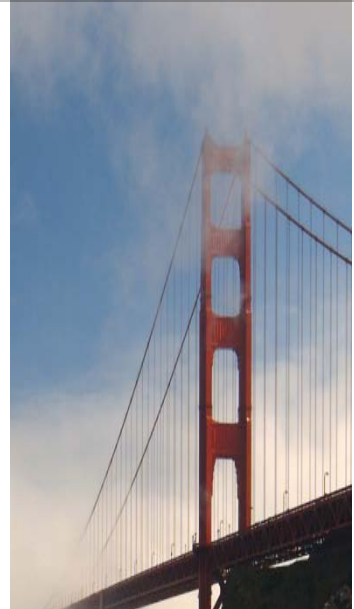
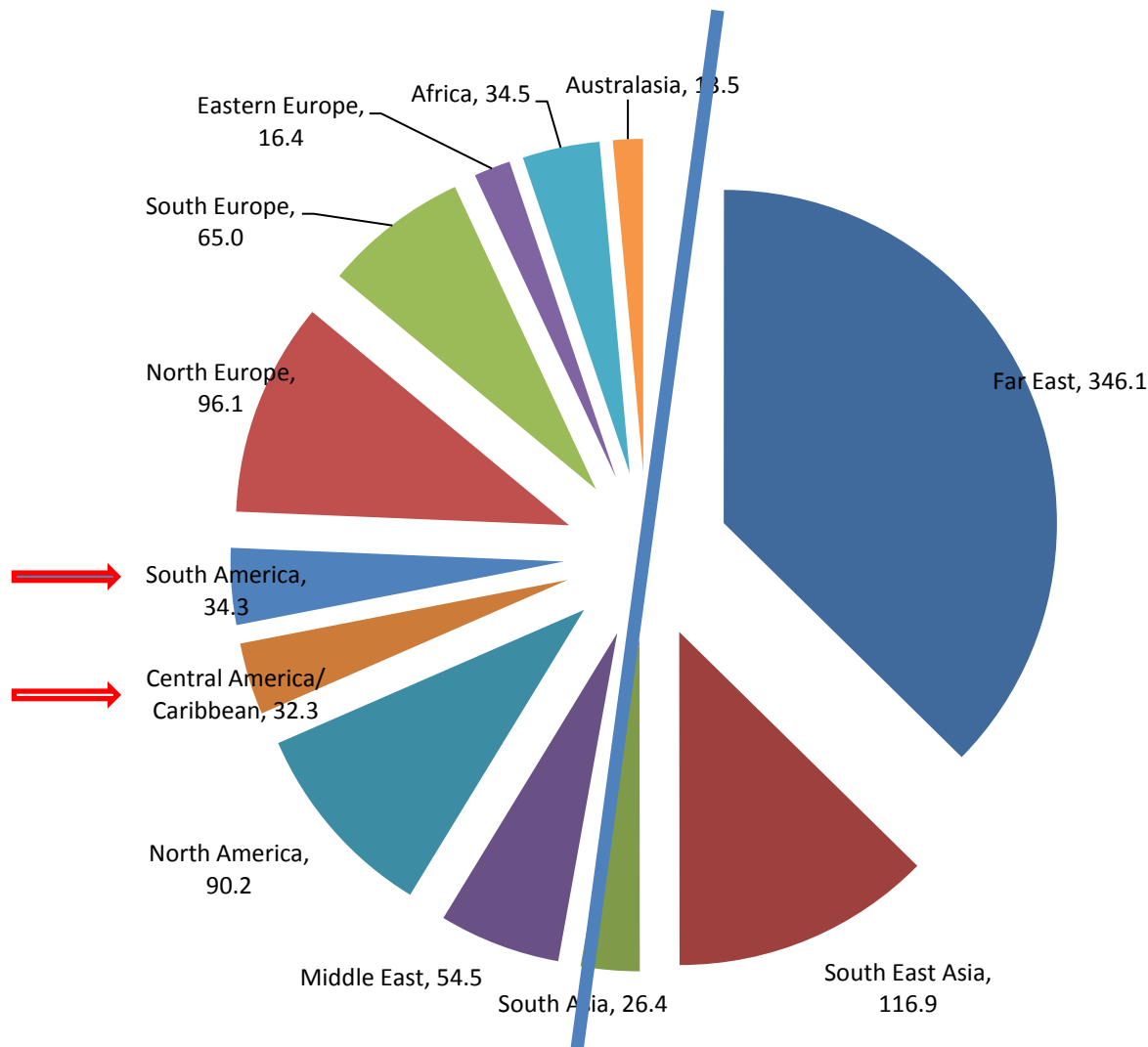
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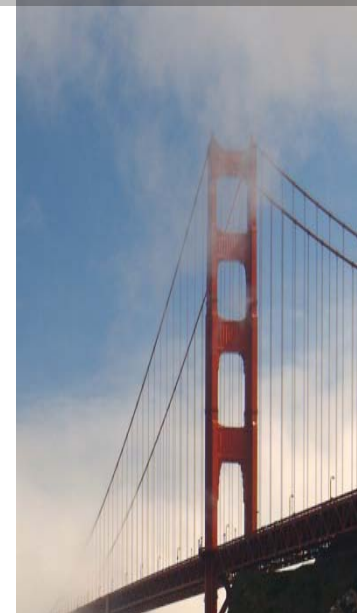
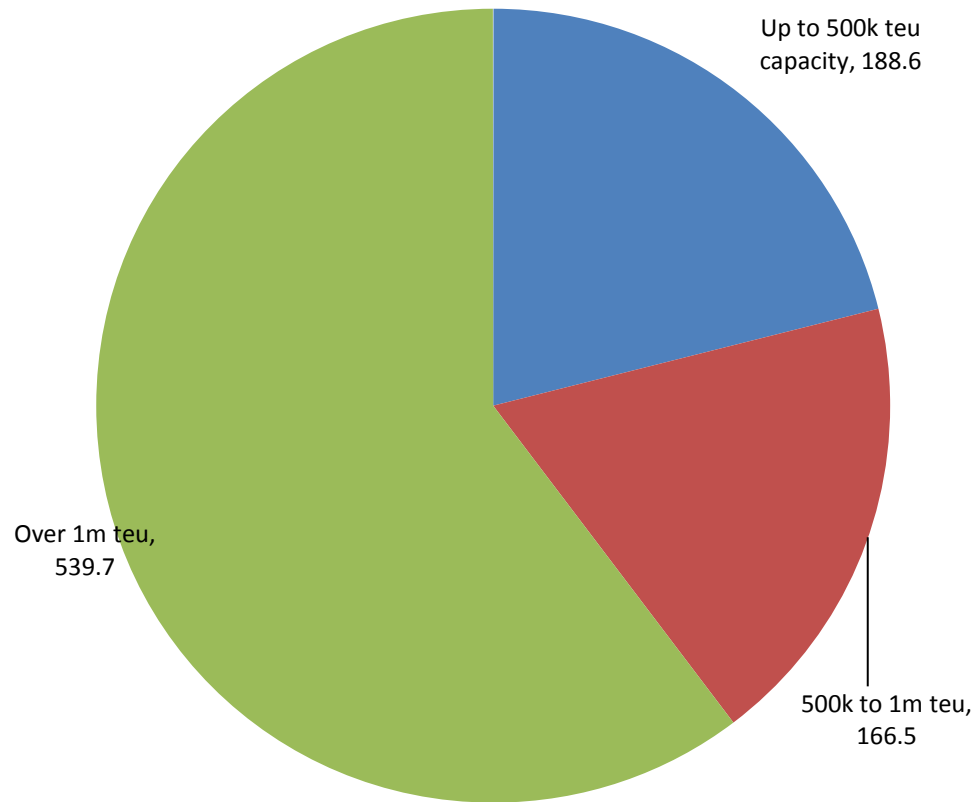
2012 container port capacity by world region (million teu)

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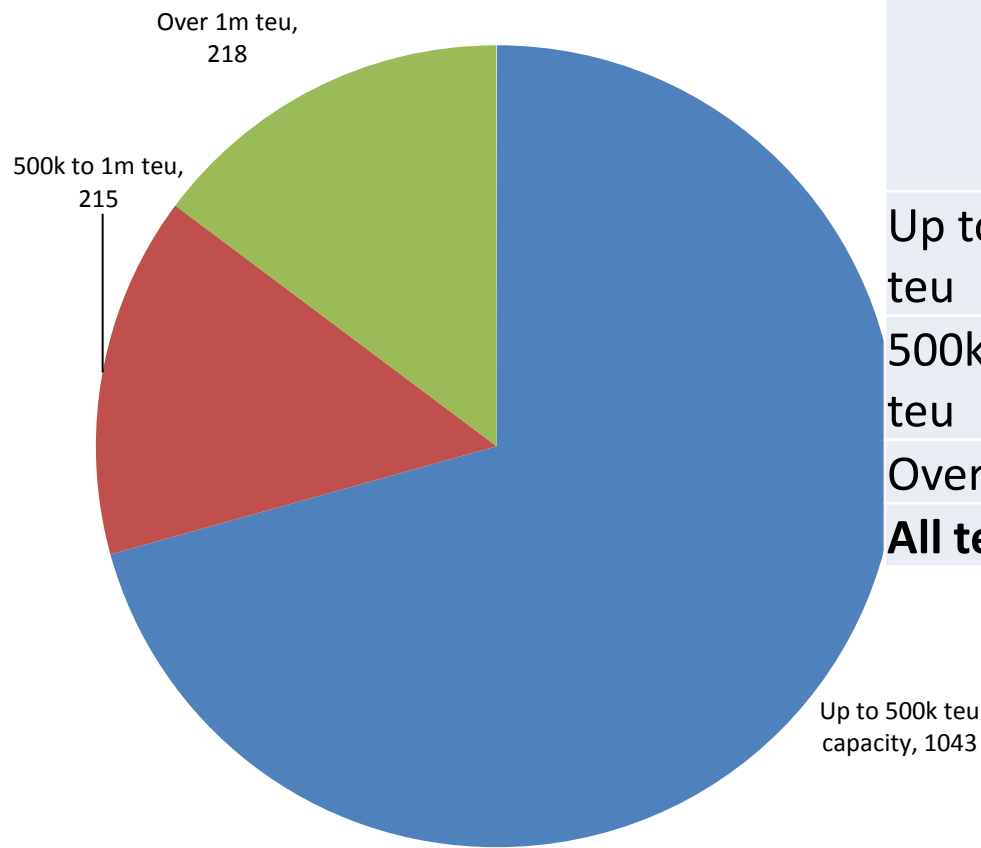
2012 container port capacity by size of terminal (million teu)

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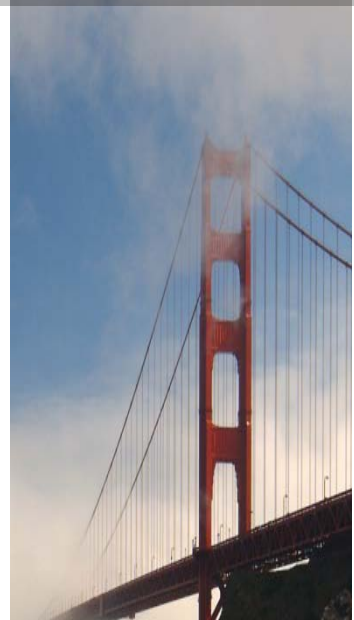


2012 container port capacity by size of terminal (number of terminals)

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	Average capacity (million teu p.a.)
Up to 500k teu	0.18
500k to 1m teu	0.77
Over 1m teu	2.48
All terminals	0.61



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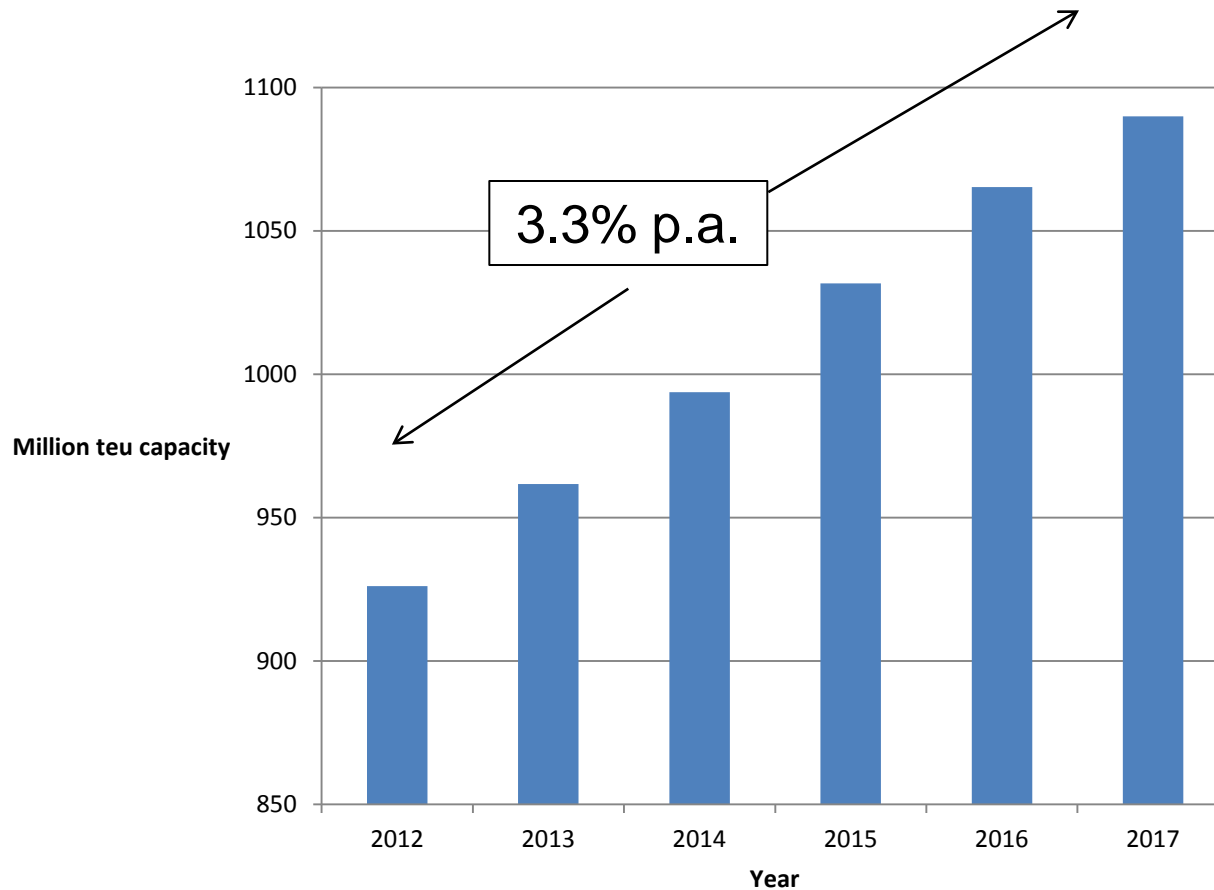
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Forecast development of global container port capacity to 2017

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Forecast development of global container port capacity by region to 2017

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New capacity (million teu)	2012-2017	
North America	9.1	Exceeding N Europe's
Latin America	14.7	~ = Rotterdam's throughput
North Europe	12.5	
South Europe	7.3	Well below forecast demand growth
Far East	46.3	
South East Asia	11.6	
South Asia	23.1	Near doubling of capacity
Middle East	16.0	



Forecast development of global container port capacity by region to 2017

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Demand growth less than capacity expansion	South Europe, South Asia
Demand growth = capacity expansion	North Europe, Middle East, Africa
Demand growth more than capacity expansion	North America, Far East, South East Asia, Latin America, Australasia, Eastern Europe



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Infrastructure and equipment challenges posed by bigger ships

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- In order to be able to accommodate the current largest container ships, a port/terminal must have:
 - ✓ Large enough cranes (i.e. at least 21-22 boxes across outreach)
 - ✓ Sufficient large cranes (at least 3 cranes per vessel and usually at least 5 is desirable)
 - ✓ Long enough berths (i.e. at least 400 metres)
 - ✓ Deep enough water alongside the berth (i.e. at least 14.5 metres and possibly up to 16 metres)
 - ✓ Deep enough water in the approach channel (i.e. up to 17 metres)
 - ✓ And a yard/landside operation capable of coping.....



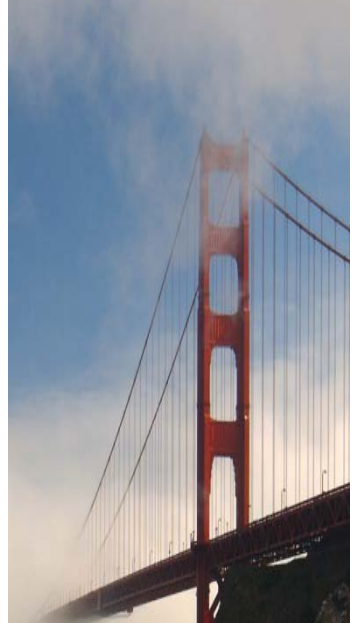
Infrastructure and equipment challenges posed by bigger ships

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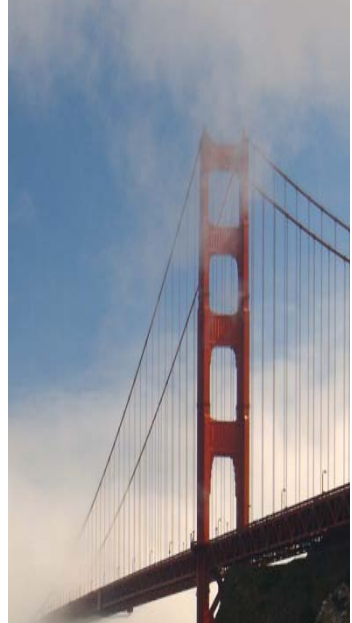
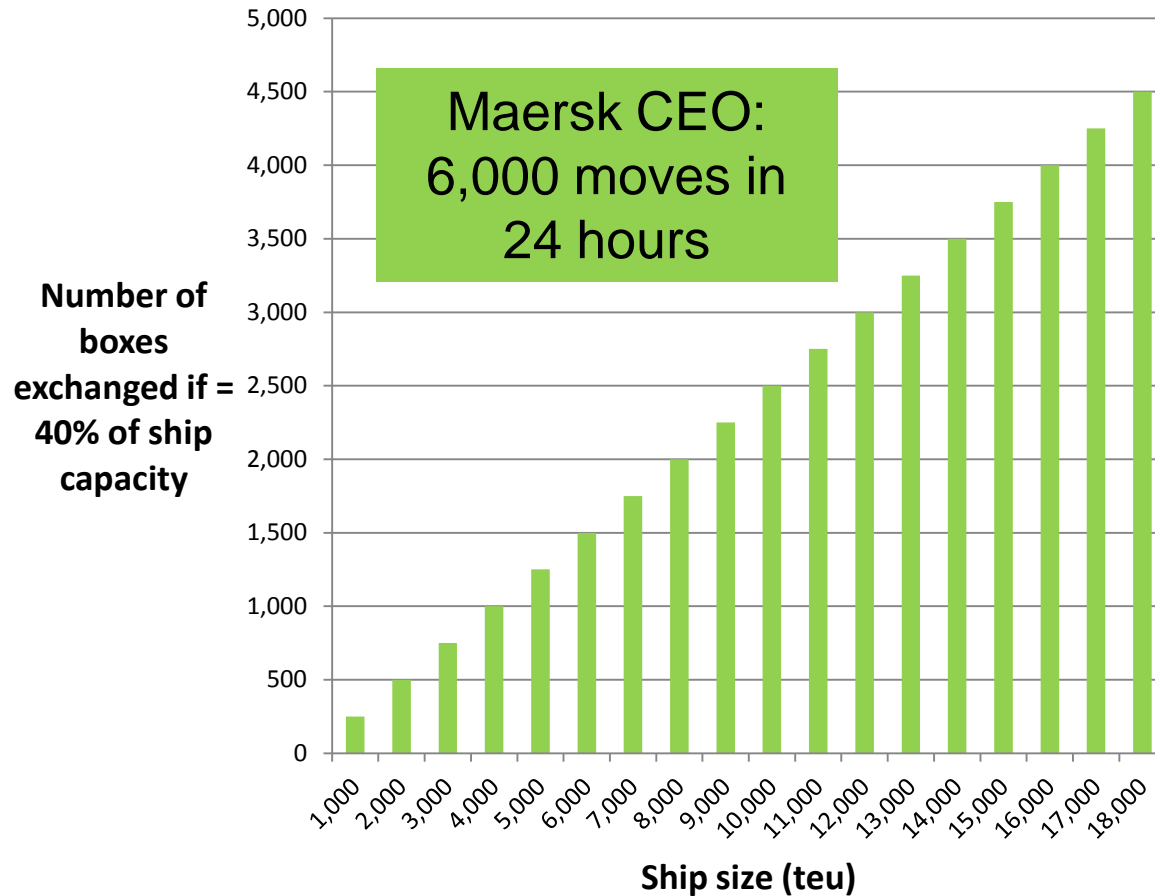
18,000 teu ships
need an outreach
of 23 boxes wide

Container ports with at least one terminal with at least 14.5 metres alongside berth depth and at least 3 gantry cranes of 22+ boxes wide outreach



Size of exchanges per vessel call get very large very quickly

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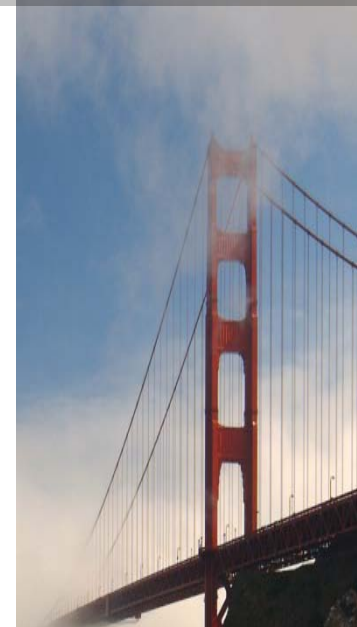
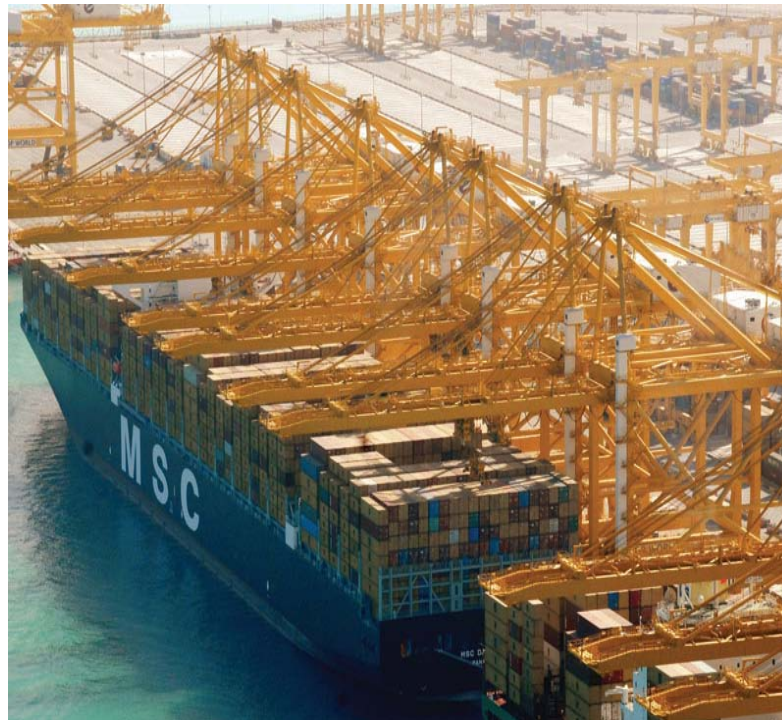


Berth productivity issues

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Ship turnaround time is driven by:

- Individual crane cycle speeds
- Crane intensity across the ship



Crane intensity

The number of cranes deployed on a vessel depends on numerous factors including:

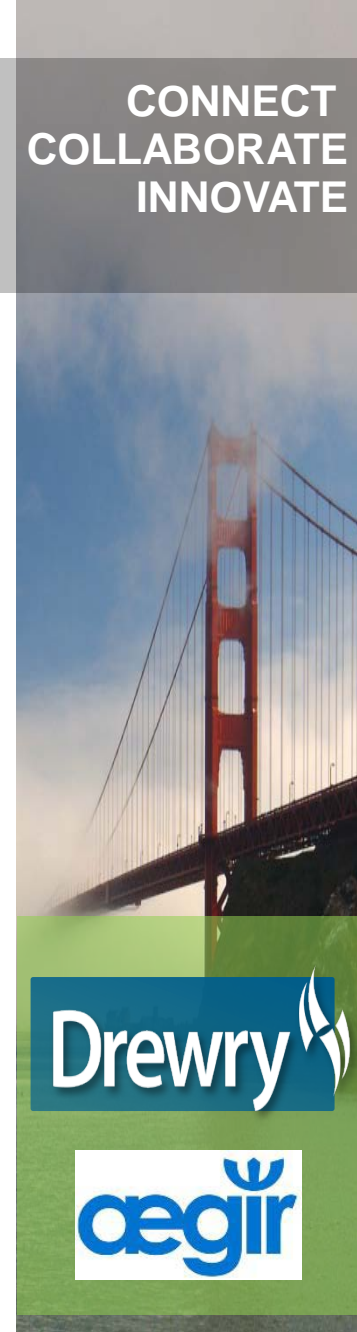
- ✓ The size of the container exchange per vessel call
- ✓ The way in which the ship is stowed for the port in question (e.g. spread out or concentrated)
- ✓ The speed of turnaround required or guaranteed
- ✓ The availability of labour

Plus, the number of cranes deployed will vary during the course of the ship call (start with peak number usually and then reduce as holds are finished)

....and can the
landside keep
up?

Drewry 





Crane intensity

- Can you increase the average number of cranes deployed directly in line with ship size?

12,000 teu ship = 370m long
15,000 teu ship = 400m long
18,000 teu ship = 400m long
22,000 teu ship = ?



Crane intensity

Ship size (teu)	Boxes exchanged	Average crane intensity	Average GMPH/crane	Time in port (hours)
18,000	4,500	7	26	24.7
18,000	4,500	5	37	24.3

29% reduction in crane intensity requires a 42% increase in GMPH per crane

Round voyage times, number of port calls and numbers of ships per string look likely to remain the same despite bigger ships

Cascading e.g. 13,000 teu ships already on Transpacific, 12,000 teu vessel on Far East – South Africa



Conclusions

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- 6% p.a. demand growth globally over next 5 years, but regional variations
- Around 3.3% p.a. growth in capacity on average, and again regional variations
- Most terminals are small or medium sized
- Increasing ship sizes pose challenges for all terminals both in terms of crane moves per hour and crane intensity

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Net result?

Infrastructure is a capital intensive, long range planning process. Global trade and cargo throughput is outpacing government's and the industry's ability to keep up with it, as it is currently structured.

How will things change?



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Infrastructure challenges in the Americas

- Infrastructure exceedingly difficult to plan and fund ie, it is pro-cyclical (boom and bust cycle)
- Only 2% to 3% of GDP in region going into infrastructure; requires more like 5% to catch up
- US\$450b will take place in infrastructure in LATAM from 2011 – 2015
- 2009, LATAM had more private sector participation in infra projects than any other developing region (mainly in Brazil, Chile, Colombia, Peru – why the missing countries?)



Infrastructure challenges in the Americas

- Biggest obstacle is in leveraging existing transport infrastructure in the hinterland and expanding and modernising this – the main bottleneck in LATAM
- Rail is the next major undertaking
- What is the most feasible balance between building ‘mega ports’ and investing in the hinterland logistics chains with existing resources?
- Is it possible to rationalise transport assets in LATAM as a region?
- To effectively compete globally the ‘Americas’ will need to become a more integrated and effective trading block



Infrastructure challenges in the Americas

- Supply chain infrastructure in LATAM clearly did not evolve in a planned manner; this cannot continue to be the case
- The next major driver of LATAM will be internal consumer growth fuelled by expanding consumer credit; the region is not ready
- In LATAM there are 161 ports, only 21 have channels of 50 feet depth or more, 13 of these are in Brazil



Infrastructure challenges in the Americas – as well as the US

- The US \$1.4 TRILLION stimulus allocated \$220 BILLION for failed solar panel and renewable energy companies; in the past four years the transportation department has invested \$357 million in infrastructure improvements
- ‘Public ports and their private partners expect to invest \$9 billion in port infrastructure. There is a shared responsibility, and the federal government, we believe, is not upholding its end of the partnership...’ Kurt Nagel, *‘America’s maritime infrastructure crying out for dollars’*, The Economist 2 February 2013



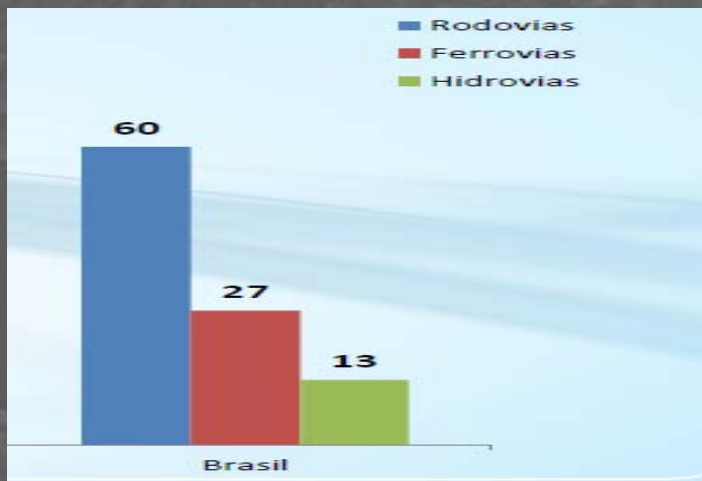
Lack of capacity and infrastructure: Example – Brazil

- World Economic Forum: Criticises Brazil's ports as worst of BRIC countries; out of 142 it is 132, Chile is 37
- Brazil reached port capacity in 2010 with 837.9 MT
- Infrastructure investment urgently needed; ANTAQ receives 14 proposals for private terminals with little effect



Brazil's progress since...

- Growth
- Investments
- Congestions
- Cascading ships
- Dredging plan
- The New Frontier
- Plano Nacional de Logística Integrada (PNLI) (30 years)
- EPL
 - New central transport infrastructure state company, EPL (Empresa de Planejamento e Logística)
 - Tasked with integration/coordination of transport infrastructure development
 - EPL will run new projects and integrate past and ongoing initiatives into a semblance of cohesion



Modal Split
Source: Antaq



Public investments in transport infrastructure and sector reform packages

Packages will cover

- Roads
- Railways
- Ports
- Airports

The road and railways package:

- US\$ 66 b
- 7,500 km of road duplications
- 10,000 km of railways construction
- financing via BNDES - Central Development Bank
- Involves reshuffling some existing railways concessions

The Ports package : US\$ 25-30 billion investment - more than half by end 2014



Brazilian ports “at capacity limit”

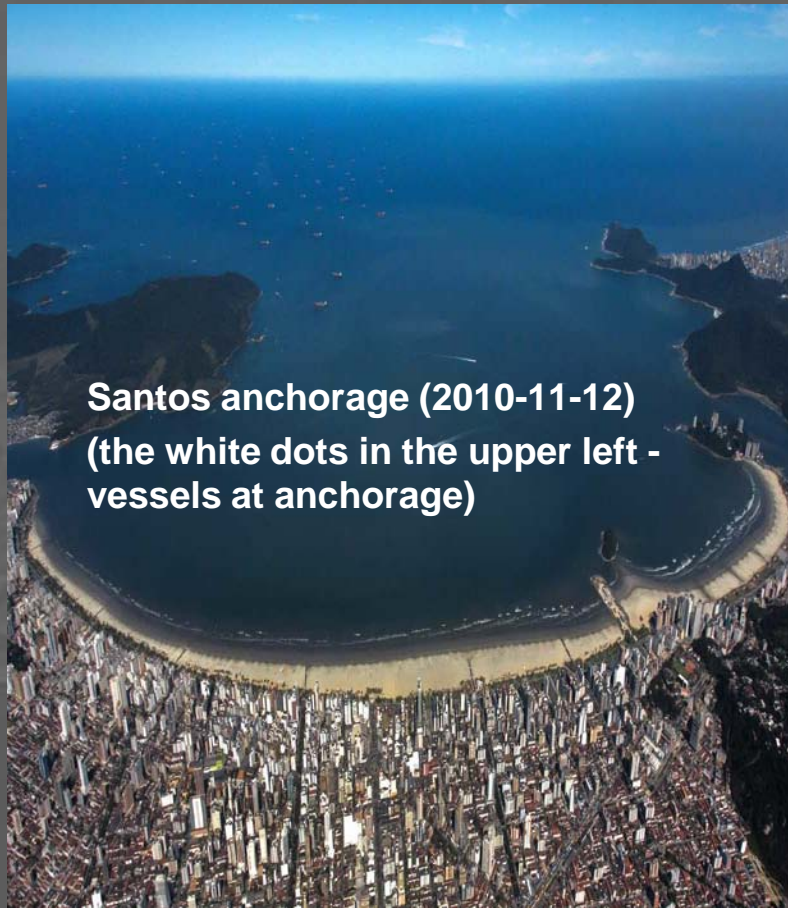
10 main container ports above 70% capacity utilisation

Capacity utilisation 2011 – main container terminals

('000 teu)	2011	capacity/y	Utilisation	Expansion going on
MANAUS	472	450	105%	No (stalled)
PECEM	188	300	63%	yes
SUAPE	435	450	97%	yes
SALVADOR	242	335	72%	yes
VITORIA	279	325	86%	conceptual
RIO DE JANEIRO	464	600	77%	Conceptual level
SEPETIBA	305	600	51%	no
SANTOS	2964	3455	86%	yes
PARANAGUA	682	700	97%	yes
ITAJAI	985	1150	86%	conceptual
RIO GRANDE	617	885	70%	no

Fonte : Drewry/Datamar

Congestion on sea and and-side



Santos anchorage (2010-11-12)
(the white dots in the upper left -
vessels at anchorage)

Source: Estudio58



Road access in Santos & Paranaguá



Source: Elog



Paranaguá 45 vessels on roads 3/8/10



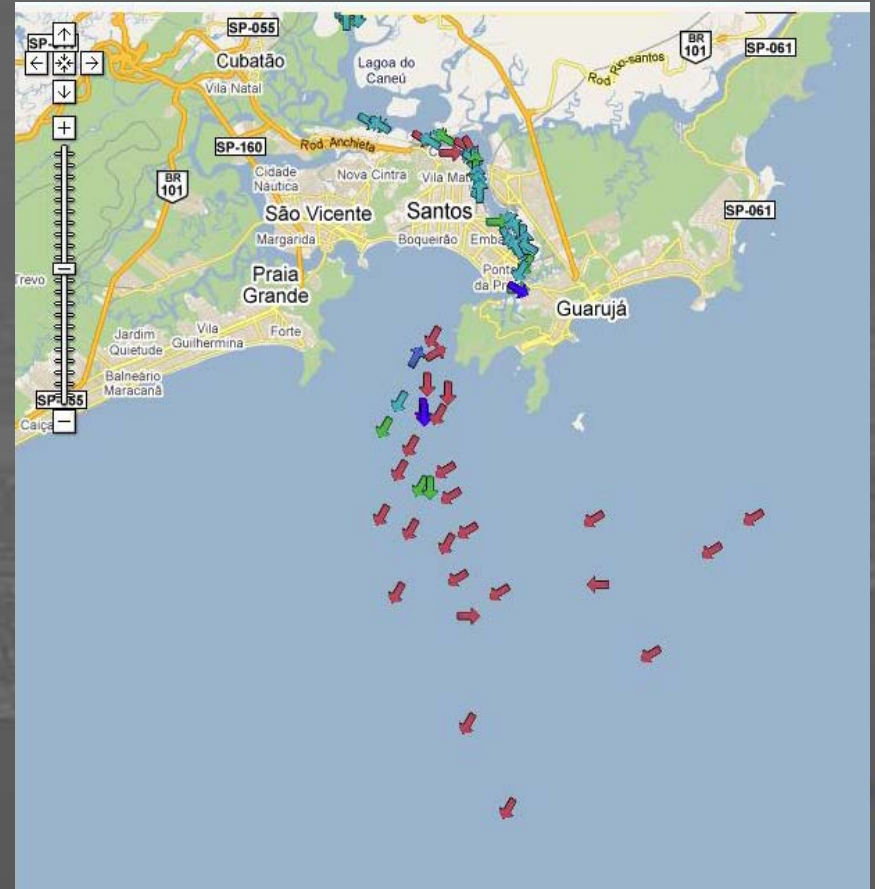
Source: Datamar AIS : 3 Aug.2010

Santos: 38 vessels on roads 3/8/10



Source: Datamar AIS

Paranaguá and Santos 28/5/11: 27 and 24 vessels on roads



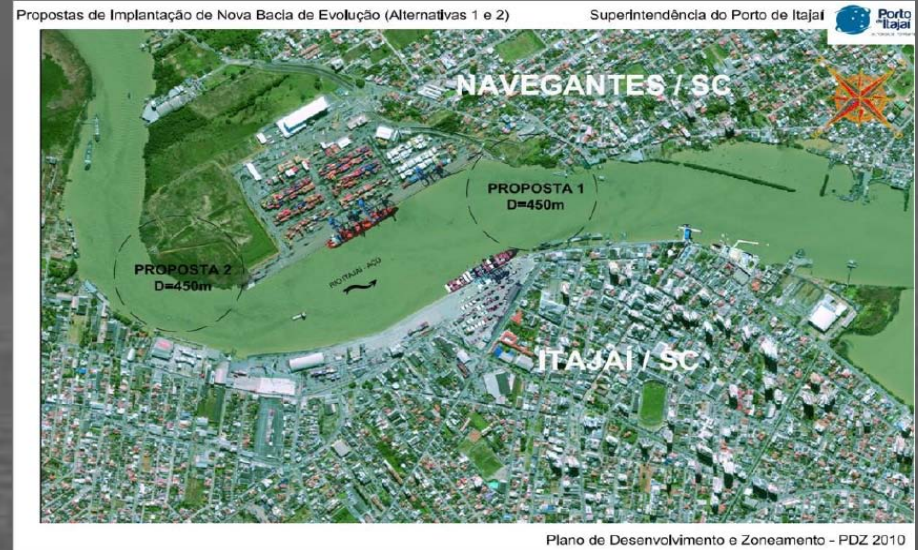
Source: Datamar/AIS

... It is: cascading ships and the pressure on port infrastructure



Source: Port of Itajai

MSC Loretta, at 304m LOA and 40m beam 6750 teu



Itajai: 2nd biggest container port



The New Frontier



The Government wants to tender 4 ports in 2013

- Manaus
- Ilheus
- Imbituba
- Malhado
- Suape container terminal II , to become North-East container hub is in the starting blocks
- Imbituba : the concessionnaire has been granted a moratorium of 3 years, because the concession has been “suspended” for 3 years during WWII



Conclusion: OPPORTUNITIES in a new landscape

- Regardless of final ports package, it will provide a new landscape full of opportunities for private investments in ports, logistics and transport in Brazil
- Trend: multipurpose port & industrial complex (property intensive)

(clockwise : Manaus, Ilheus, Suape)



Regional Challenges

- Funding requirements not being met; private sector being frustrated by bureaucracy
- Bottlenecks resulting from lack of adequate hinterland infrastructure
- Integration of regional transport assets between and within countries



Ports – nodes in ever expanding/integrating global supply chain

- Present supply chain weak link - ports' inability to process more throughput faster
- 'Just in time' now 'integrated time', requiring more specialised facilities such as 'fast buildings'
- Property at, near and related to ports is key to addressing these issues



Where are ports in the modern supply chain?

- Ports are elements in value driven supply chain systems – nodes
- Supply chains are relatively opaque – no sharing of data
- Logistics is highly efficient industry – transport is balkanised – major opportunity for ports
- Integration of existing assets can result in major efficiencies



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The evolution of port privatisations...

- The Beginning – the ‘Iron lady’: too extreme?
- Then, privatisations of port operations: is this the end of the privatisation extent?
- Now, port authority ‘corporatisation’



Port authority 'corporatisation'

- What is it?
- Where did it start?
- Why do it?
- Is it enough? Can government owned PA's catch up now with the demand for capital?



The potential for the 'privatisation' of 'corporatised' port authorities

- Will governments jettison PA's to raise much needed capital for other infrastructure needs?
- Australia is already doing it: A\$2.1b for Brisbane, Kembla, Melbourne and Sydney next
- Interestingly, being sold to the public as 'debt financing'
- Structured with many safeguards

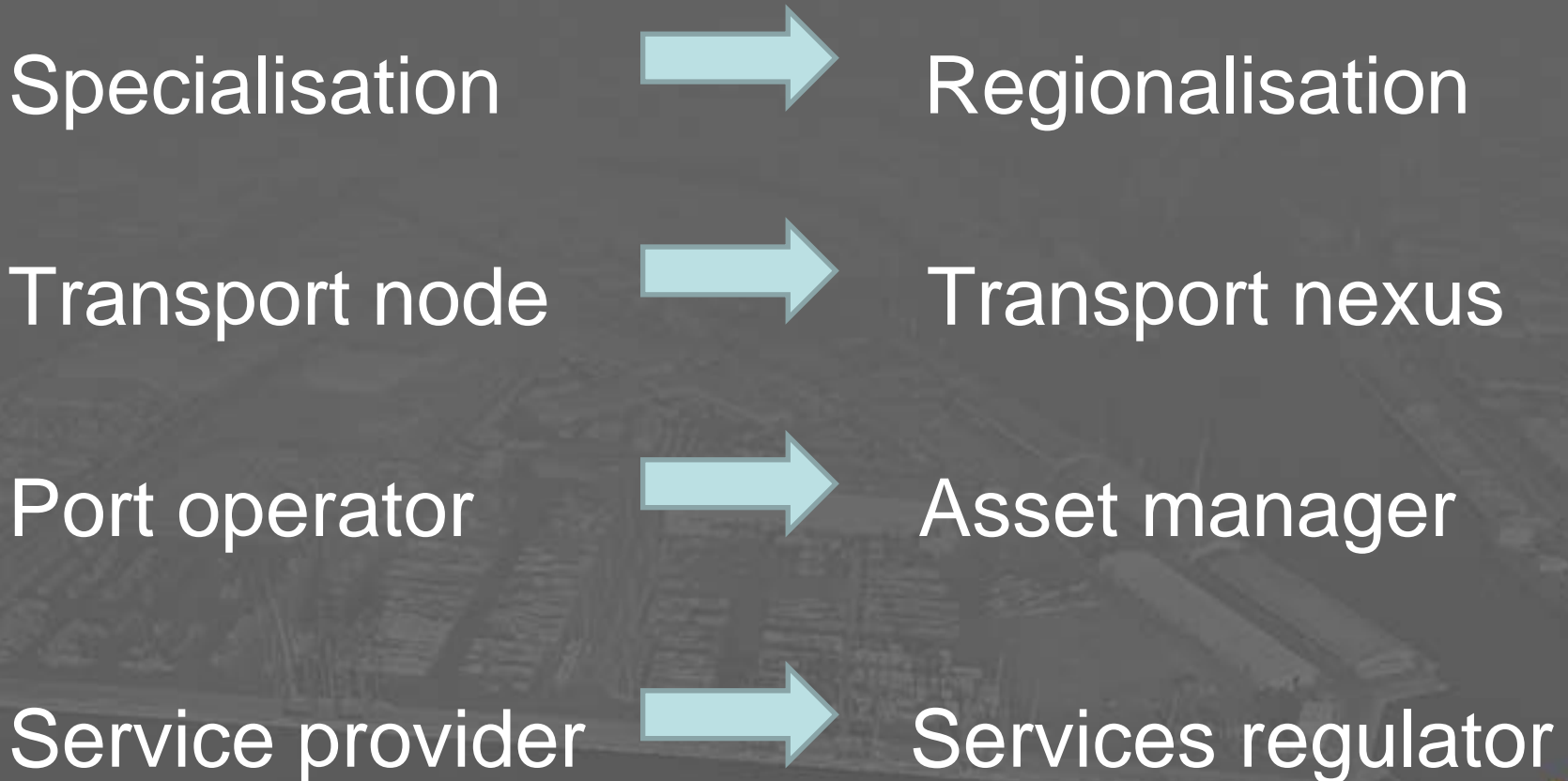


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Port Authorities' evolution



You're in a different business now



Big Ships' impact on port property?

- Most large ports are land constrained
- 8,000 TEU ship requires 40 ha for smooth inbound container flow
- Throughput per acre - key for customer profitability and satisfaction



Port property is:

The largest asset on your balance sheet, which should be strategically utilised to produce:

- More property based revenue streams
- More competitive advantages to retain and attract port clients
- Enhance the overall value of the port/terminal
- Whose tied up equity should be unleashed to modernise and expand ports



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The future of this industry promises to evolve at exponentially faster rates.

There is no question – a massive paradigm shift is underway in all sectors.

Governments and private sector entities need to re-think, re-calibrate and move forward.

There will be losers, and winners.



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Questions for you:

- How many here can answer what ROI their real property assets delivered last year?
- What do you include in your lease rates, how do you know you are really making money?
- Property is the largest asset on your balance sheet, how many have a strategic port property asset management plan?



Where is the future for ports and logistics?

INLAND & IN LAND!

(Thank you Kurt Nagel!)



Thank You for your kind attention

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