John Swire & Sons est. 1816 – Asia Waterfront – Bund, Shanghai, 1840's

AAPA – Port Real Estate Workshop – Navigating the World of Port Properties. ©

aegir Port Property Advisers

Drewry Maritime Advisors

Franc J Pigna CRE FRICS CMC, Managing Director

18 September 2018

Port Property Advisors | Maritime Research | Maritime Advisors | Supply Chain Advisors | Maritime Equity Research

www.aegirports.com

www.drewry.co.uk

Port Property Advisers

Since 2003, Aegir Port Property Advisers are the pioneer consultancy engineered to meet the unique property challenges faced by the ports and maritime industries. Aegir's focus is to enhance a port's competitive position and financial value through the more strategic use of its largest asset - property.

In the last decade Aegir has undertaken complex port property lease, asset management, valuation, development feasibility, management consultancy and strategy instructions in Europe, the Middle East, Africa, the Americas and Asia with port asset values in the billions of US dollars.

Maritime Advisors

From our origins in 1970 London to a 21st century maritime and shipping consultancy, Drewry has established itself as one of the most widely used and respected sources of impartial market insight, industry analysis and advice. This in-depth understanding and objectivity provides our clients with the actionable advice and recommendations they need to achieve their ambitions and stay ahead of the market.

- Last 10 years - over 400 port assignments in 50 countries.
- Since 2010 - $20bn value in commercial and due diligence advice in port M&A and financing.
- Last 5 years - provided advice on vessel valuations on asset value of more than $180bn (combined).
- Last five years - advised on container shipping industry on investments totalling $6bn.

info@aegirports.com

www.aegirports.com

Helping you navigate the world of ports by bridging the gap between the port and property sectors.

USA (Aegir)	UK (Drewry)	India (Drewry)	Singapore (Drewry)	China (Drewry)
301 Almeria Avenue Suite 210 Coral Gables Florida 33134-5822 USA	15-17 Christopher Street London EC2A 2BS United Kingdom	4th Floor Tower C Pioneer Urban Square, Sector 62 Gurugram Haryana 122002 India	#13-02 Tower Fifteen 15 Hoe Chiang Road Singapore 089316	Unit D01, Level 10 Shinmay Union Square Tower 2 506 Shangcheng Road Pudong, Shanghai 200120
T +1 888 517 9990	T +44 20 7538 0191	T +91 124 497 4979	T +65 6220 9890	T +86 (0) 21 6182 6759

Port Property Advisors | Maritime Research | Maritime Advisors | Supply Chain Advisors | Maritime Equity Research

Let’s get started…

TIME TO GET RID OF THE BOX…

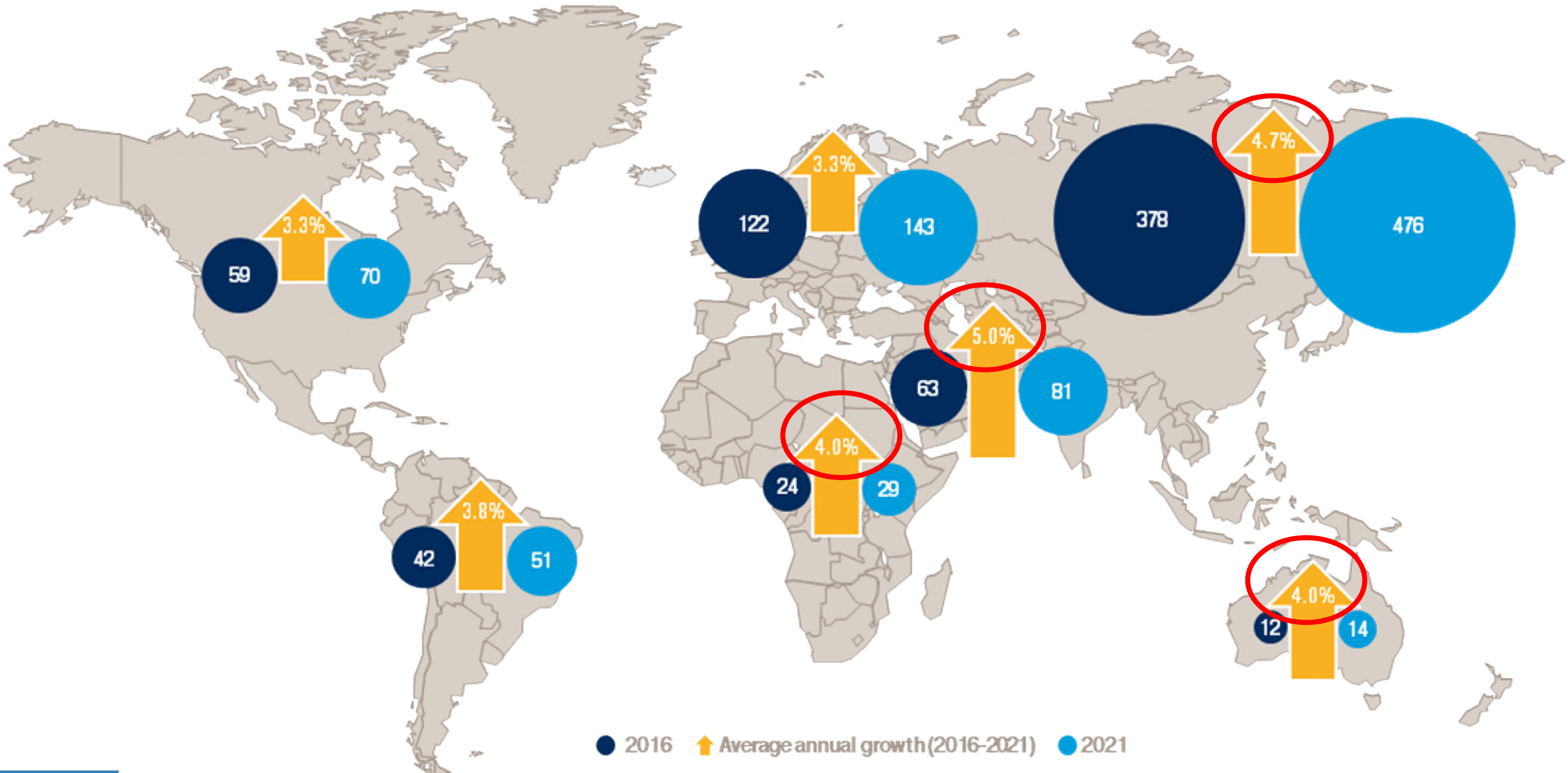
…AND START THINKING WELL OUTSIDE THAT COMFORT ZONE!

Market environment challenges

Five-year regional container port demand forecasts

Pre recession, 11% average growth; average growth now: just over 4% per annum

Projected Container Port Volumes by World Region (million teu) and Average Annual Growth (%), 2016-2021



Alliances Consolidating…

2015

2M

Ocean 3

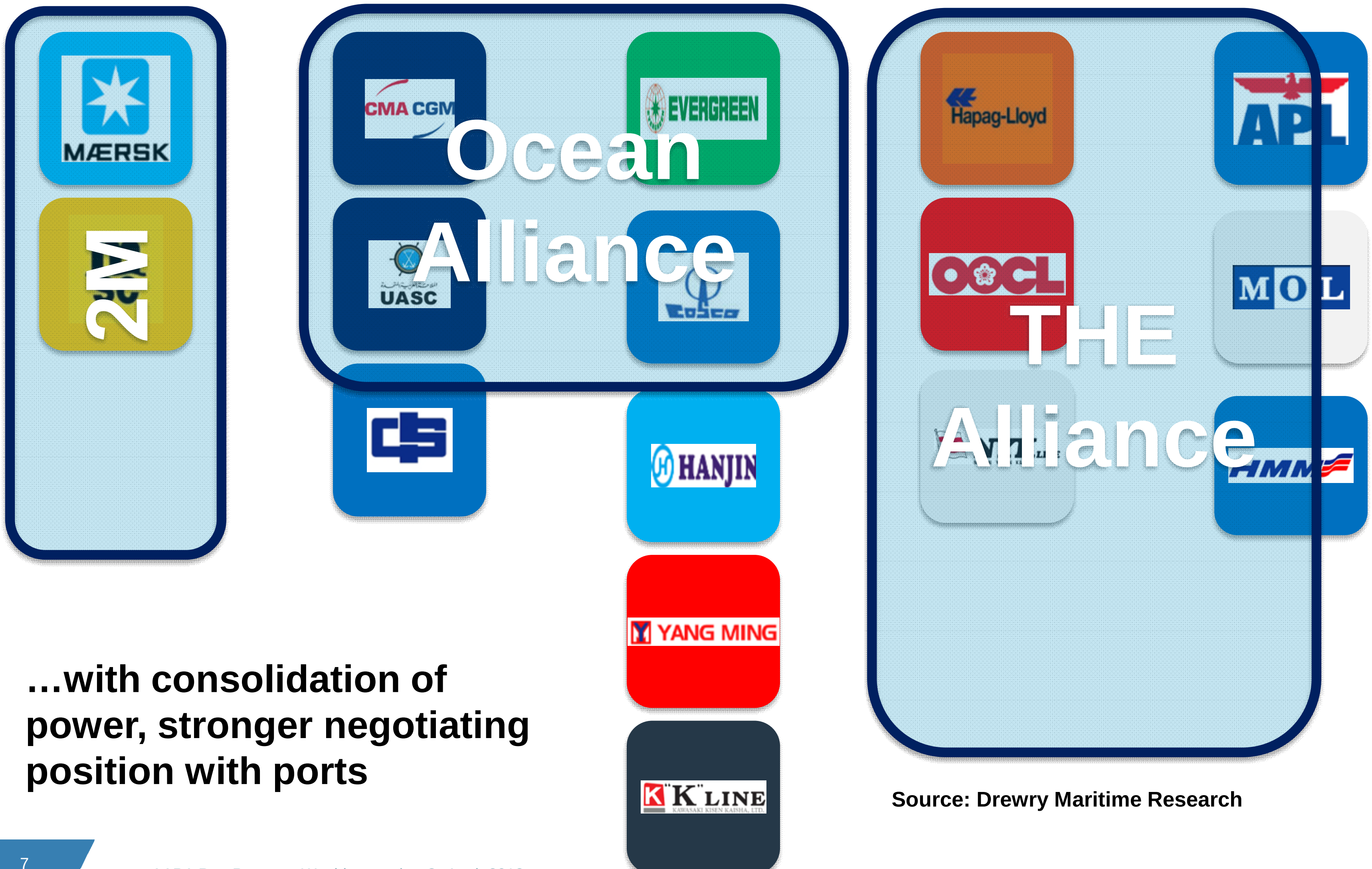
CKYHE

G6

Source: Drewry Maritime Research

Alliances Consolidating…

2017



…with consolidation of power, stronger negotiating position with ports

Source: Drewry Maritime Research

Infrastructure challenge and ports

The infrastructure challenge – why things will change, quickly

- $57 trillion in global infrastructure required in 2013 - 2030 just to keep up with projected GDP growth (McKinsey Global Institute)
- This is exceeds the value of global infrastructure today (MGI)
- US requires $1.6T next five years (double current outlay) just to bring infrastructure to acceptable levels (ASCE)
- US port infrastructure underinvestment: a few years ago, USDOT invested $357m in 25 port projects; $40m less than Port of New Orleans did in its own port (The Economist)
-

Infrastructure challenge

- US port infrastructure: ranked 22nd globally, behind Iceland and Estonia (World Economic Forum)
- US national debt: now at $20 trillion
- How many believe infrastructure can/will continue to be funded the way it has been?
- The time has arrived where infrastructure capital requirements have outpaced most governments ability to fund it
- Ports will need to become self-funding for their infrastructure needs

Port infrastructure challenges

Vessel cascading will continue for a while yet…

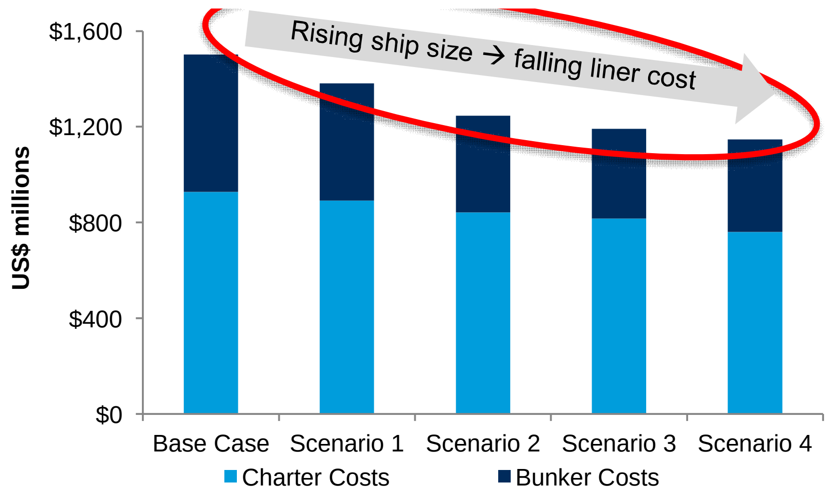
	2011	2013	2015	2017
Asia-North Europe	16,000	16,000	19,000	21,000
Asia-Med	14,000	14,000	16,000	16,000
Transpacific	10,000	13,000	14,000	14,000
Transatlantic	7,000	8,000	9,000	9,000
Asia-South America	9,000	10,000	11,000	13,000
Asia-W Africa	4,000	4,000	8,000	13,000

Impact of bigger ships on port infrastructure?

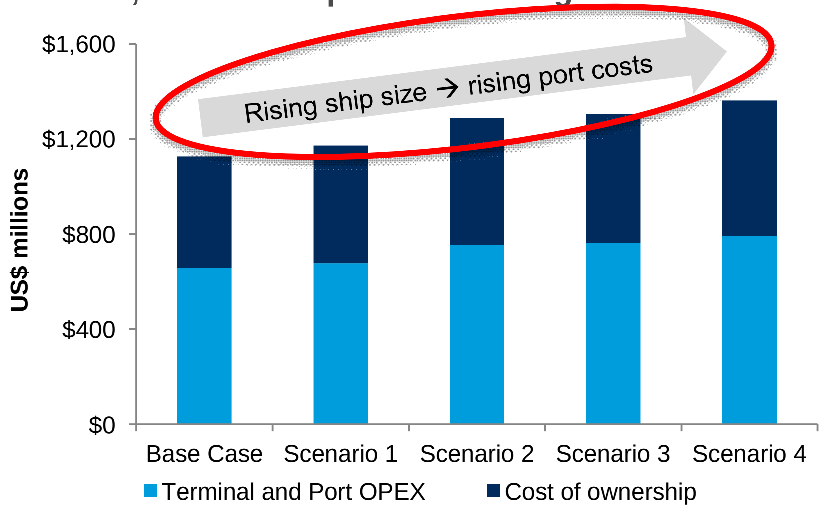
Container shipping - Findings from the Drewry study

Diminishing economies of scale from megaships?

Simulation shows liner costs fall as ships get bigger



However, also shows port costs rising with vessel size



- As vessel sizes increase:

Shipping lines' network costs fall…….

…….but the costs incurred by ports and terminals rise

….so overall system costs increase

- **Drewry believes optimum vessel size reached for foreseeable future (and may already been exceeded)**
- **Aegir believes ports not charging enough to cover true costs and profit on asset values ie, PROPERTY!**

Larger ships, major peak periods changing demand for ports/terminals…

…requiring more infrastructure, longer periods of underutilisation, lower revenues AND fewer, but larger terminals – MAJOR port challenge!

Shipping lines obtaining <u>cost savings</u> with bigger ships…

Before

3,000 boxes

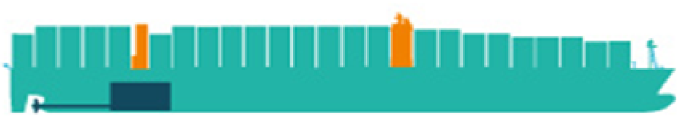
MONDAY

3,000 boxes

THURSDAY

…but generating <u>higher investment needs</u> through supply chain infrastructure

After



6,000 boxes

MONDAY

Are shipping lines prepared to pay for these enhanced requirements?

Implications of liner industry development

Terminal costs now the largest spend item for carriers

% split of costs (AP Moller Maersk) 2012 and 2015

Costs	2012	2015
Vessel	26%	28%
Bunker	25%	13%
Terminal	24%	32%
Other	25%	27%

Pressure to reduce terminal handling costs (impact on port fees?)

Question of joint contracting by alliances (impact on port concession, rents?

Source: AP Moller Maersk Annual Reports

Port property – port's new strategic asset

- 8,000 TEU ship requires 99 acres to keep container flow inbound smooth; most large ports are land constrained
- Throughput per acre key to making customers money and satisfied eg, in US about 4,000 – 5,000 TEU/acre yet in Europe and Asia 10,000 TEU/acre and higher is not unusual
- Therefore: PA's will need to acquire/control land banks inland to facilitate processing, throughput and addressing value added functions increasingly required y clients
- Automation will be key

Net results of market and infrastructure challenges…

- Ports will need to invest in more infrastructure, process more cargo on same footprint and increase cargo velocity to service increasing ship sizes.
- But, ports will make less marine revenues from fewer calls (but hopefully more throughput revenues).
- Fewer but larger alliances will force rationalization of terminal and berth assets.
- This will also result in tougher negotiations with larger and fewer major clients and increasing pressure to squeeze concession fees.
- Market growth will stabilize, increased capacity will add more pressure on shipping lines to squeeze costs.
- This will translate into a heightened competitive operating environment for ports.

Port Authorities' evolving role

Port Authorities' evolution

Specialisation →	Regionalisation
Transport node →	Transport nexus
Port operator →	Asset manager
Service provider →	Services regulator

PA's – they're in a different business now

Port Authority's emerging role

- Now operate as 'for profit' entities, responsible for raising their capital needs

- From operator to asset manager - property their main asset

- PA's address four main functions* :

  - Traffic
  - Customer
  - Area
  - Stakeholders

* De Langer, 2008

PA's evolution

- PA's must now look beyond being an asset manager within the port confines
- Must actively look where it can promote their respective supply chains/logistics corridors through facilitating them, directing infrastructure investment*
- Such investment in time, knowledge and capital leads to **growth in two main revenue drivers:**

  - Land rent/values **- Throughput**

Both are intrinsically intertwined

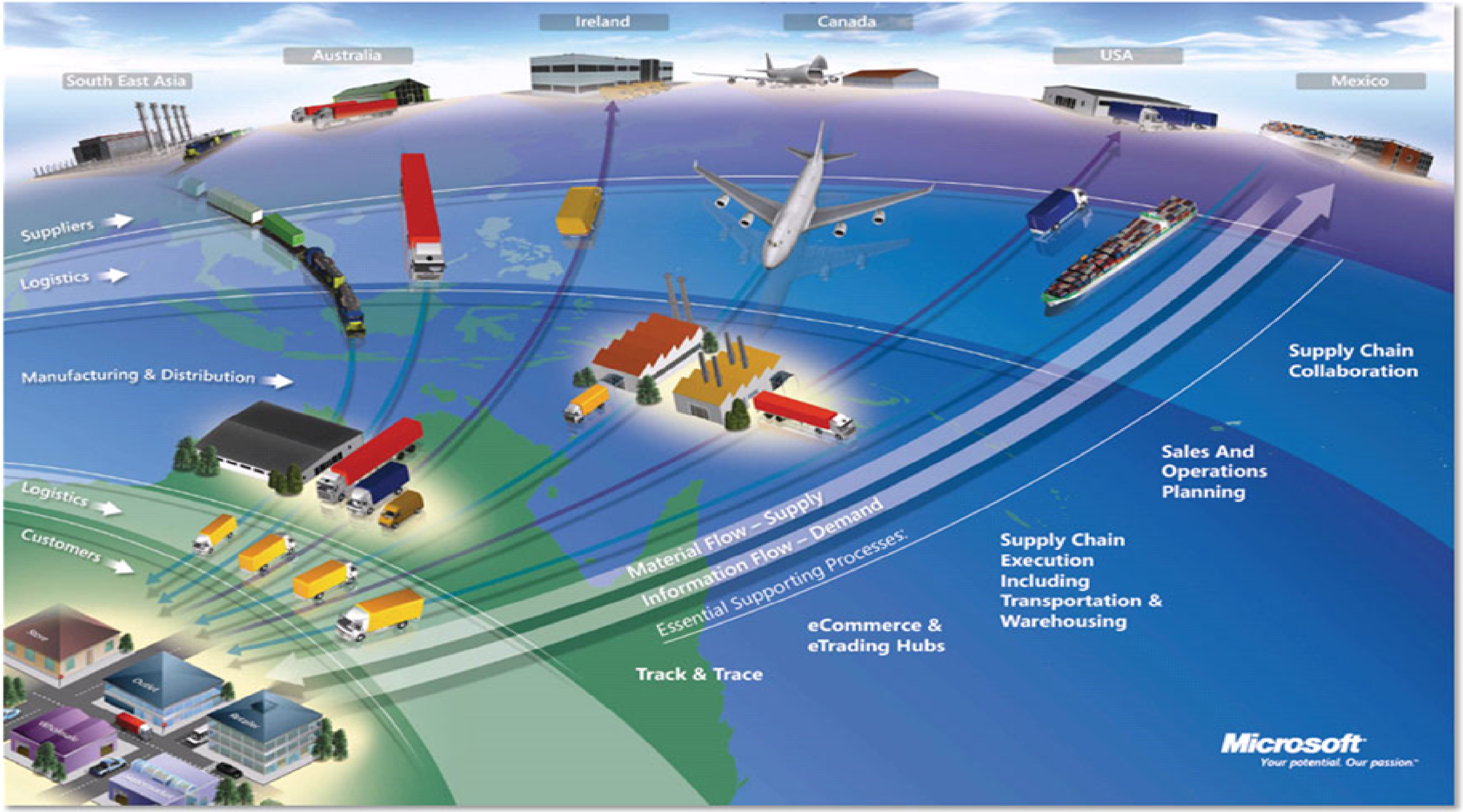
* de Langen, 2008

PAs' hinterland challenges

- In the 'Sea – Land' equation land now key to compressing supply chains – why?
- Expanded hinterland coverage = ports being more competitive, less oligopolistic*
- Competition now between supply chains/logistics corridors – not ports
- More cargo through fewer ports & ports competing for hinterlands
- Ports need to increase throughput/capacity on same footprint by moving non operational activities inland

* Notteboom, 2008

The supply chain – each step is heavily property reliant



PA's – the natural transport leaders?

- Why PA's are natural transport leaders for logistics chains*:
  - Investments in logistics poles benefits all users, regardless of who invests (resulting in freeloaders).
  - PA's through throughput charges can more equitably invest in infrastructure
  - PA's can manage port communities and clusters to create more efficient, broader, competitive regional load centres
  - PA's can better manage environmental constraints
  - A better managed logistics pole and inland facilities guarantee PA's maintain their competitive advantages as well as competition within supply chains
- But all will require even more land…

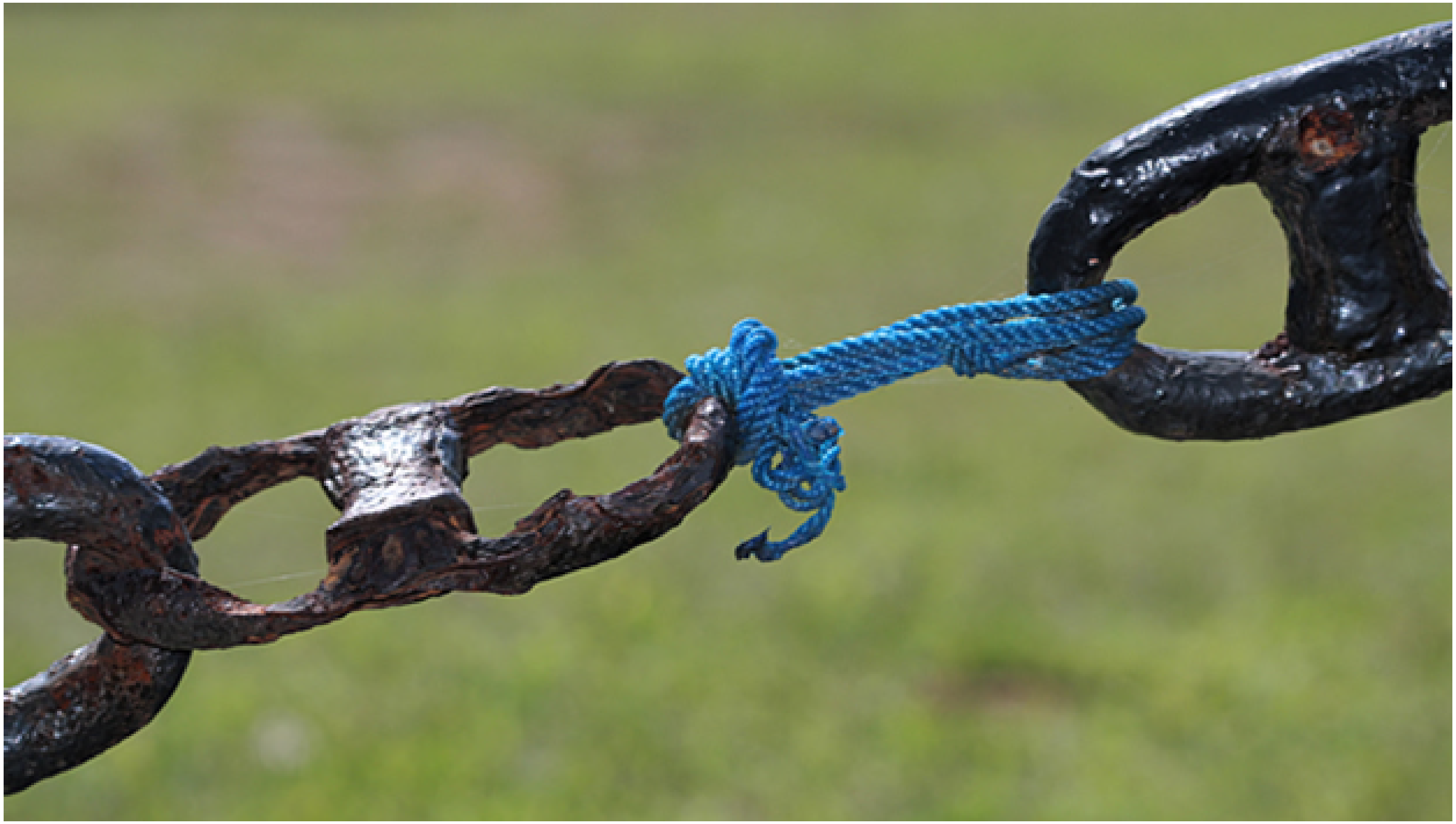
* Notteboom, 2008

Ports as hinterland nexus leaders - examples

Source: PA's websites, trade journals

Port Authority	Project	Objective
Los Angeles/Long Beach	Alameda Corridor	Decongestion at terminal
Barcelona	Rail, Terminal Maritima	Deeper access; inland terminals to capture mkt share
Rotterdam	Transferium	Barge intermodal 40 kms away from port
Antwerp	Trilogiport	100 ha logistics platform
Marseilles	Lyon inland port	Develop Lyon as Marseille's multimodal satellite
Lisbon	Puerta del Atlantico	Logistics platform outside Madrid

So, which link in the supply chain will your port be - this?



Or this?

The business of a port authority

Why PA's need an asset management approach

- More effectively access private capital to release tied up equity in largest asset – property
- Increasing ability to borrow beyond enterprise value
- Increase competitive advantages
- Increase property revenue streams
- Maximise overall port value
- Extend port 'life cycle' to circumvent economic/functional obsolescence

Lease issues

- Realistic capital basis (land value) – the starting point
- Balance between property based rent and throughput based rent MAG (rating agencies?)
- Terms & conditions, adequate and proper rent reviews
- Meaningful lease rates; ‘financiable’ leases
- Impact of capitalised leases (elimination of FAS 13) on tenants (lease versus buy issues by corporations)

What should a lease cover financially?

Costs

- Cost of capital, risk?
- Inflation?
- Capital sinking fund for renovations, infrastructure recapture?
- Repair & maintenance?
- Operating, insurance, security, electricity?

Revenue

- Return on investment?
- Return on equity?
- Landlord profit?
- Demand/supply balance?
- Throughput charges, wharfage?

Port property valuation challenges

- Valuation of port properties benchmarked against true ‘like kind’ properties (but there are few ‘sales’)
- Need to concentrate on port’s specialised economic use (yet maximisation takes second to economic development)
- Replacement, comparable sales or income approach?
- Recapture of infrastructure, real return of and on capital (yet ports still highly subsidised)

On what basis do you value port property?

- On its ability to generate a cash flow
- The strength of the lease covenant
- Lease terms and conditions eg, rent reviews, pass throughs, etc
- Income versus comparable approach, as there are very few port properties sold.

State of Port Property

State of port property – AAPA research paper

- International survey conducted of six ports:
  - –US Gateway
  - –US Inland
  - –US Gulf
  - –European gateway
  - –Asian transhipment
  - –Latin American regional

State of port property

- Port’s surveyed represented:
  - –34,176 acres/13,831 hectares
  - –$6.835 billion in land value (at $200k/acre or $495k/ha)
  - –2,145,000 teu’s
  - –750,000,000 MT

Survey results

- Ports need to act like a business and not constrained by economic development issues
- Have reached serious point of being capital constrained; past financing methods do not work
- Need to better understand private sector capital markets
- Believe solutions will come from private sector

Survey results

- Shift to property rent revenue from MAG's and throughput charges
- Property side of business needs to be better understood
- Terminal concessions do not take into account underlying land
- No starting basis of value for property portfolio

Survey results

- Traditional appraisers do not understand dynamics of port business, challenged in identifying ‘highest and best’ uses
- Want accurate data on property values to better manage business
- Economic development requirements disconnects them from real, competitive world
- Leases do not reflect real financial performance needs

Survey results

- No port property asset management in place
- Capitalisation rates and financial performance thresholds not readily defined
- Property departments understaffed; importance of property little understood outside of senior management
- Property assets underperforming financially

Conclusions

The future of this industry promises to evolve at exponentially faster rates than in recent history – and that was fast.

Regardless of size, all ports are grappling with where and how to finance expansion and modernisation and increase profits.

Property is the ports' sector's next frontier.

The future of you port lies inland

and

IN LAND!

Thank you

Navigating the World of Port Properties – To Maximise the Value of Your Ports

Aegir Port Property Advisers
Drewry Maritime Advisers