DISCUSSION POINTS

1) Setting the scene: International Shipping & Port Industry Challenges

2) NZ Port Structure

3) NZ Industry Challenges

4) A regional Perspective

5) The role of technology in our business
International Ports - Ongoing Terminal Over Capacity Current Situation

- Terminal capacity is exceeding demand for the foreseeable future
- This overcapacity will be put increased pressure on competitiveness
- Terminals need to find ways to improve efficiency
THE WORLD'S BUSIEST PORTS

VOLUME BY MILLION TEU* (2018)

Shanghai 37.1
Singapore 30.9
Shenzhen 24.0
Ningbo-Zhoushan 21.6
Busan 19.9
Hong Kong 19.8
Guangzhou 18.9
Qingdao 18.1
Jebel Ali 15.7
Tianjin 14.5

Klang 13.2
Rotterdam 12.4
Kaohsiung 10.5
Antwerp 10.0
Dalian 9.6
Xiamen 9.6
Hamburg 8.9
Los Angeles 8.7
Tanjung 8.3
Keihin 7.6

*20 foot equivalent unit or standard 6.3 meter shipping container

In 2006, only 3 of the top 10 ports were located in China.
Ports - Shipping Line Activities

- Consolidation of Container Lines and possible reduction of calls (ie Maersk / Hamburg Sud)

- Hinterland competition - cross subsidization of transport costs to increase container volumes and attract more calls

- Vessel sizes increases and predicted effect of larger vessels cascading down

- At the same time to date cascading hasn’t occurred to the level expected
• Pressure on Port charges as Containers lines struggle and freight rates drop and lines look to Ports to alleviate some of the pressure

• Need to invest in new technology - bigger cranes, automated systems, larger tugs, deeper berths with no long term commitments

• Greater reliance on particular key markets - ie in the case of NZ China now a major market for many products
Container ships have been getting bigger since they began operating in liner services over 50 years ago because the increased size produces increased operating efficiency and improved environmental performance.

Some of the world’s biggest container ships are about 1,300 feet long - that’s nearly 400 meters or the distance around an Olympic running track - with a maximum width of 180 feet (55 meters). Their engines weigh 2,300 tons, their propellers 130 tons, and there are twenty-one stores between their bridge and their engine room. They can be operated by teams of just thirteen people and a sophisticated computer system. If that number of containers were loaded onto a train it would need to be 44 miles or 71 kilometers long!

This size increase has been exponential; ships doubled in volume in 20 years between 1975 and 1995, and then almost doubled again in the following decade, doubling yet again between 2005 and 2015. And it’s not over yet! Plans are to continue increase size to 21 100 TEU* by 2017.
Shipping Lines

What are we talking about?

CMA CGM BENJAMIN FRANKLIN's length: 1,306 ft

TECHNICAL INFORMATION
- Nominal Teus: 17859
- Teus 14TH: 11889
- Reefer Point: 1400
- S.DWT: 185070
- S.Draft: 16.00
- L.O.A: 399.20
- Beam: 54
- GT: 178228
- NT: 116356

Did you know that the 25 largest ships capitalize 460 000 Teus capacity in total?
Shipping Lines - Recent

Where do we go?

- How to accommodate tomorrow those big ships in your terminals, plan being to go over 22,000 Teus!

- How to fill those ships when demand is not there?

- Although it permits to remain cost competitive, the old model of growth through acquiring new capacity, building new ships is not working.

Shipping Industry is redesigning itself

1. Geostrategic challenges: global environment / growth of last 10 years with multiple of 2-3 on volumes will not continue
2. Price pressure: low margins / short cycles
3. Less players: 3 alliances / similar products - urgent need for more / better differentiation

Extraordinary
Nelson Tasman
Shipping Lines

The vicious circle of shipping

2016

- Overcapacity
- Marginal Pricing / Decrease of Freight Rates

2017

- Results are improving
- Freight Rates are increasing
- Capacity is removed

Shipping Industry is losing money

Capacity ordered or re-injected

Imbalance between Supply & Demand
Shipping Lines

...leading to heavy losses
Necessity to merge to survive or disappear!

Potential M&A Targets or marginalized to regional trades

APM-Maersk 15.5% MSC 13.5% CMA CGM 10.3% COSCO 7.5% ‘J-3’ 7.1% Hapag-Lloyd+UASC 6.6% Evergreen 6.8% Hamburg Süd 4.8% OOCL 2.9% Yang Ming 2.7% MOL 2.7% NYK 2.4% HYMM 2.2% PIL 1.8% K Line 1.6% Zim 1.1% Wan Hai 1.1%
Shipping Lines

Global shipping market in 2017

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Capacity</th>
<th>Market share</th>
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<tbody>
<tr>
<td>1</td>
<td>APM - Maersk</td>
<td>3,258</td>
<td>15.7%</td>
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<tr>
<td>2</td>
<td>MSC</td>
<td>2,823</td>
<td>13.6%</td>
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<tr>
<td>3</td>
<td>CMA CGM GROUP</td>
<td>2,147</td>
<td>10.4%</td>
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<tr>
<td>4</td>
<td>COSCO</td>
<td>1,555</td>
<td>7.5%</td>
</tr>
<tr>
<td>5</td>
<td>Evergreen Line</td>
<td>994</td>
<td>4.8%</td>
</tr>
<tr>
<td>6</td>
<td>Hapag-Lloyd</td>
<td>962</td>
<td>4.6%</td>
</tr>
<tr>
<td>7</td>
<td>Hamburg Sud</td>
<td>602</td>
<td>2.9%</td>
</tr>
<tr>
<td>8</td>
<td>Yang Ming Marine Transport</td>
<td>575</td>
<td>2.8%</td>
</tr>
<tr>
<td>9</td>
<td>OOCL</td>
<td>575</td>
<td>2.8%</td>
</tr>
<tr>
<td>10</td>
<td>UASC</td>
<td>538</td>
<td>2.6%</td>
</tr>
<tr>
<td>11</td>
<td>MOL</td>
<td>500</td>
<td>2.4%</td>
</tr>
<tr>
<td>12</td>
<td>NYK LINE</td>
<td>500</td>
<td>2.2%</td>
</tr>
<tr>
<td>13</td>
<td>HYUNDAU MM</td>
<td>454</td>
<td>1.8%</td>
</tr>
<tr>
<td>14</td>
<td>PIL</td>
<td>366</td>
<td>1.7%</td>
</tr>
<tr>
<td>15</td>
<td>K LINE</td>
<td>349</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

Source: Alphaliner, publishing date 24 Feb 2017
Shipping Lines
Shipping alliances, a necessity

I. Shipping lines can rationalize their resources
II. Shipping alliances have instigated creation of mega ships and mega ports
III. Lines are able to offer more global coverage

Why Do shipping lines Need Shipping Alliances?

Operational costs in shipping account for over 67% of the total cost of running a shipping line operation. Out of this, 46% relate to Bunker costs and 21% relate to port charges, both of which are variable costs (means not fixed costs).

Shipping lines realized that under the current economic conditions, they cannot provide a service coverage by working alone as it will mean tying up their ships on a specific route for weeks and the other routes remaining not served.

One of the main aims of shipping lines creating shipping alliances or vessel sharing agreements is to cut these variable costs, and the best way of doing this is through the usage of common resources such as ships, port terminals and networks around particular routes.

Entering into alliances seems to be the right fit for everyone, as larger shipping lines can rationalize their resources in an alliance whereas the smaller lines can enjoy the extended service coverage without having to invest in increasing their fleet size.
Shipping Lines

What does a shipping alliance do & not do?

A shipping alliance behaves pretty much in a similar way as a liner operation of an individual shipping line, but provides more coverage and scope.

In the recent years, the creation of shipping alliances has brought mega ships and mega ports into the fore and such alliances allow better allocation of the shipping lines’ resources, which naturally reduces operational costs, allows the expansion of service coverage, optimizes the ports of call and ultimately achieves economies of scale.

What an alliance does NOT do is to share commercial information such as cargo information, shipping rates, customer information etc. Those still remain under the control of the partners within the alliance and are not shared.

**ALLOWED**
- VSA, SWAP
- Operations cost
- Port & network optimization
- Economy scale

**NOT ALLOWED**
- No rates
- No customer information
- No cargo information
- No commercial information
NZ Port Structure

13 commercial Ports in NZ:

- Northport
- Ports of Auckland
- Port of Tauranga
- Gisborne
- Port Napier
- Port Taranaki
- CentrePort
- Picton
- Nelson
- Lyttelton
- Timaru
- Port Otago
- Southport
NZ Port Structure

Two partially listed on the NZ Stock Exchange:

- Port of Tauranga 54% owned by BOPRC / 46% public
- Southport 66.48 % Southland Regional Council / 23.52%
- Port of Napier in process of investigating ownership options to help fund future significant developments
- Unlike many other countries NZ Ports aren’t just landlords, they are terminal operators, Stevedores, Pilotage providers, Tug operators, warehouse and logistics operators
- Under the Ports Co’s Act there is a requirement that Ports will ‘be run as a successful business’
NZ Industry Challenges

- Consolidation of shipping lines and larger vessels calling fewer Ports
- Very small market in world terms
- Large number of container ports for the size of the country - partly geographical
- Bulk cargo often forgotten when very good revenue earner
- Competition between Ports intense compared to Australia for example which reduces margins
NZ Industry Challenges

- As is the situation worldwide, container lines want new, expensive infrastructure for larger vessels with no guarantee of ongoing business.
- Some significant capital investment pending for dredging and new wharves but not all ports will get larger vessels.
- Insurance costs have risen dramatically in the last 8 years following on from major earthquake damage to Lyttelton and CentrePort.
- A rise in the development of Inland Ports and attempts to lure cargo away from their logical port of import/export.
- Some local bodies questioning whether to maintain current ownership shares.
Nelson - A regional perspective

- Owned 50/50 by the Nelson City Council and Tasman District Council
- Major import / export Port for the Top of the South Island
- Only significant NZ Port with no rail access - nearest rail 140 km away
- Main export commodities Fish, Logs, Processed Forestry, Apples and wine
- Major import fuel
Nelson - Strengths

• High volume of reefer cargoes
• No rail
• Strong mix of cargoes and no reliance on one commodity or shipping line (ie Dairy / New Plymouth)
• Proximity to 80% of NZ wine exports
• Flexibility of labour force
• Investment Property Portfolio
• Movement into 3PL solutions
Nelson - Challenges

- Competition between NZ Ports and some at unsustainable levels
- Increasing size of vessels
- Low freight rates for refrigerated (reefer) cargoes
- Low number of imports relative to exports
- Replacing ageing infrastructure and trying to achieve commercial returns
- Peak season requirements
Just under 23,000 m² of warehousing capacity

Lloyd’s List Asia Pacific awards finalist, infrastructure project of the year

Green Ribbon Award winner

BRC certification - includes other partners (bottling and transport - grape to glass)

Close alignment with Marlborough wine industry (80% of NZ wine)

Efficiency through utilisation and technology

Collaboration
Technology

- Log stevedoring with the scanning of logs and use of tablets. Helps efficiency and Health and Safety
Technology

- Voyager labour allocation tools
- Assists with fatigue management
- Managing hours for PPT staff and keeping track of guarantees
Technology

- Marine Harbour simulator for Pilotage and Tugs
Technology

- Marine PPU Unit
Technology

- Crane Simulators
• Seamless and transparent customer experiences driven by data

• The application enables real time cargo monitoring, visibility and management

• It allows straightforward, step by step control and data sharing capabilities from order to delivery

• All transactions kept secure by end to end blockchain technology delivered by CargoChain platform

• Convenient API and end point integration for all supply chain systems

• www.pelorus.wine
THANKS FOR YOUR ATTENTION