Productivity Commission Submission 2022

Australian Maritime Logistics System

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Flinders Port Holdings

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The Flinders Port Holdings Group ("FPH") welcomes the opportunity to provide a submission to the Productivity Commission into the inquiry into the long term productivity of the maritime logistics system.

FPH is the leading privately-owned port operator in South Australia, handling the vast majority of the state's international imports and exports each year.

Originally established in 2001 through the acquisition of 99-year land leases, associated assets and license for the operation of Port Adelaide and six regional ports across South Australia (Port Lincoln, Port Pirie, Thevenard, Port Giles, Wallaroo and Klein Point), FPH has since grown to offer a wide range of port-related services. These services range from offshore pilotage and marine control services, as well as onshore stevedoring logistics services.

FPH's ports play an important role in facilitating economic growth in South Australia by providing vital linkages to global export markets for South Australian farmers, manufacturers and miners, as well as access to essential imports for consumers and producers. FPH facilitates the movements of circa $25bn of trade per annum, which is equivalent to 94% of South Australia's international trade and 24% of the state's Gross State Product (GSP).

FPH is also itself a significant generator of economic activity and one of the largest private-sector employers in South Australia – contributing to the prosperity of Adelaide and several regional communities across the state.

FPH has made and will continue to make significant ongoing investment in port infrastructure to increase freight capacity and to accommodate increasingly larger vessels, and improve efficiencies to drive down handling costs. Since privatisation in 2001, Flinders Ports has invested a total of $498 million in new capital and infrastructure upgrades across our ports. These investments to improve the infrastructure quality and serviceability include widening and deepening shipping channels and construction of new quay line for container and bulk trades.

FPH's submission, because of its unique position in the South Australian marine supply chain of not only owning and managing port infrastructure but also operating the only container terminal in Adelaide, has provided a combined view whilst providing examples of port supply chain efficiency impacts and matters raised in the Productivity Commission's terms of reference.

1. Long Term Trends & Structural Changes

The trends and structural changes outlined below represent the most significant impact on operations in Adelaide over the past two years. Some of these trends can be directly attributed to disruptions to the supply chain as a result of Covid, but others were long-term trends that were already in motion, such as larger vessels and liner rationalisation.

Larger Vessels

Over the past decade the size of container vessels calling at Australian capital city container ports has doubled. This is particularly true for the back half of the last decade where a significant step increase in late 2019 saw a raft of new larger vessels introduced. This involved a complete restructure of many of the old services and alliances, with many shipping lines embarking on new partnerships, forming new consortia and a resultant upsizing in vessel capacity.

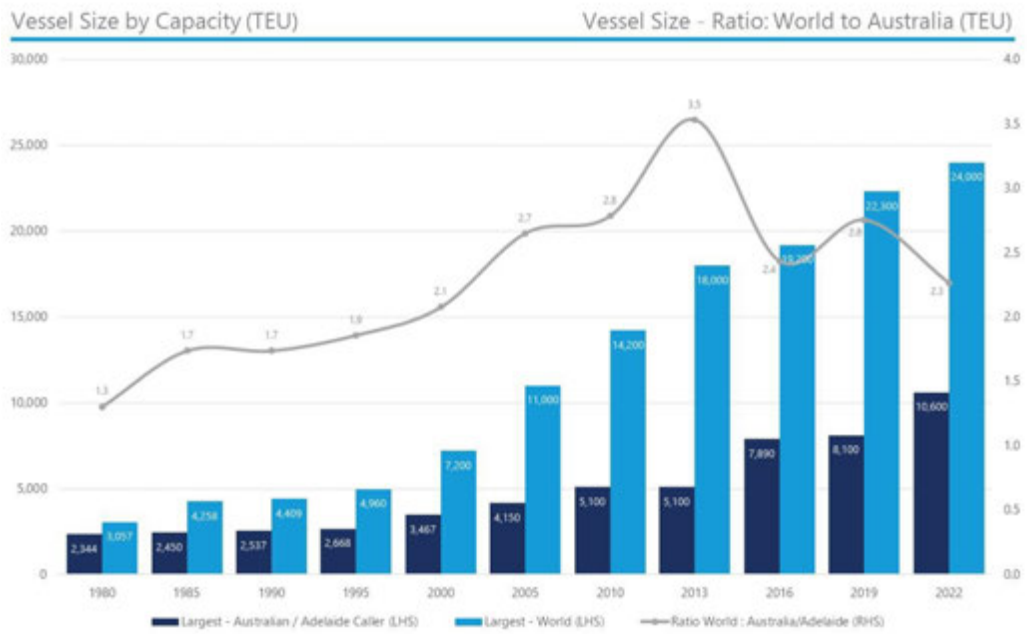

Figure 1: *Comparison of vessel size development Australia Vs the World. The largest size vessel calling Australia has doubled over the past 10 years.*

The advent of larger vessels has impacted FPH in a number of ways:

- Requirements to widen the Port Adelaide shipping channel and flow on cost impact to both the port and terminal operations - berth extensions, crane air-draft issues, etc.

- Rationalisation and subsequent reduction in overall services, resulting in fewer services, larger ships with significantly larger exchanges. This places pressure on most areas of terminal operations - yard, gate and increased pressure to manage a larger exchange in the same timeframe as previous windows.

- This was exacerbated further during Covid operations compounded by vessel bypasses, where Adelaide occasionally witnesses multiple bypasses in succession and then the subsequent vessel handling up to 3 weeks' volume.

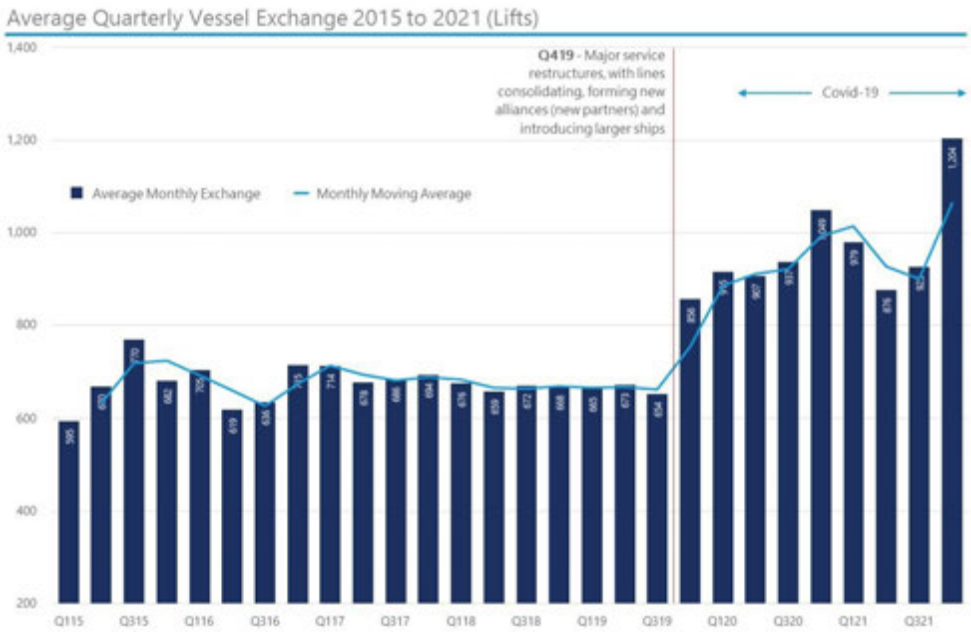

Figure 2: *Average quarterly vessel exchanges from 2015 until 2021. The average exchange kicked up markedly with the arrival of the new services with larger vessels in Q419. Since then, Adelaide container volumes have been on a steady decline, yet the average exchange is trending up. This is as a result of the number of bypasses which translates to an accumulation of containers to move on the next available vessel - artificially increasing the size of exchanges.*

Vessel By-Passes

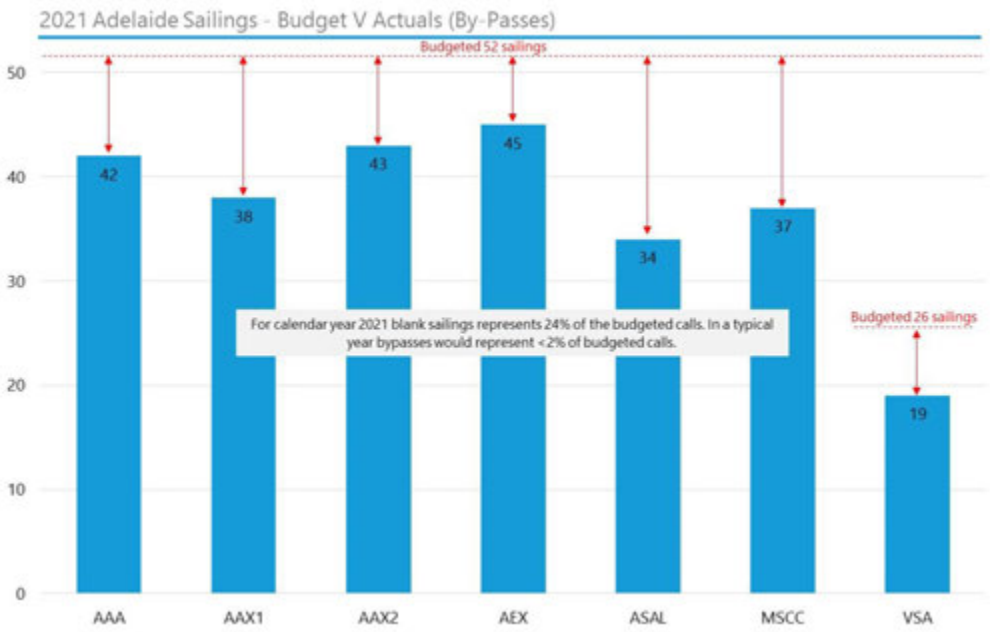

Figure 3: *Due to Adelaide small port status, we received a disproportionate number of by-passes throughout 2021. Typically, liner operators will choose the smallest port with the least cost impact to by-pass. Consequently, Adelaide has received more than its fair share of by passes over the past 12 months.*

The vessel bypasses stem from a combination of mainly overseas issues relating to overseas terminal congestion driven by post Covid demand and a spike in global container volumes. After an initial decline with the outbreak of Covid in mid-2020 the global economies bounced back strongly. This demand stems from government cash incentives, due to lack of overseas travel – consumers are spending this money on ecommerce and online purchases. A series of one-off events have further exacerbated this situation such as the Evergreen Suez Canal blockage, the outbreak of the Delta strain of Covid in the Southern Chinese ports and, more recently, the outbreak of the Omicron variant.

In Australia, waterside industrial issues have further compounded these delays with every major stevedore negotiating Enterprise Agreements over the past 12 months. Adelaide is a logical option to bypass as we are usually the smallest port (volume) and terminal (exchange) in the schedule rotation - so lines will choose the port with the least cost impact.

Liner Rationalisation / Consolidation

Liner rationalisation has occurred in a number of stages over the past five years. Firstly, consolidation with merger and acquisition activity on a global scale. This involved many of the major liner operators making strategic purchases or mergers i.e. Maersk - Hamburg Sud, Cosco and China Shipping and then also OOCL (see Figure 4 below).

For Adelaide, this liner consolidation has translated to an overall reduction in customers from sixteen (10 years ago) to ten operators in 2022. This consolidation has resulted in lines controlling a greater market share, placing pressure on price.

This rationalisation has also occurred at a localised level, where services were restructured and new consortia partnerships formed. The upshot of this was a number of services were disbanded and new alliances forged with bigger vessels coming on stream to take advantage of the economies of scale that larger vessels bring.

In the case of Adelaide, the number of services reduced from nine down to six. Under normal operating conditions, this should have resulted in nil loss of trade, just the same volume carried on fewer services with bigger exchanges.

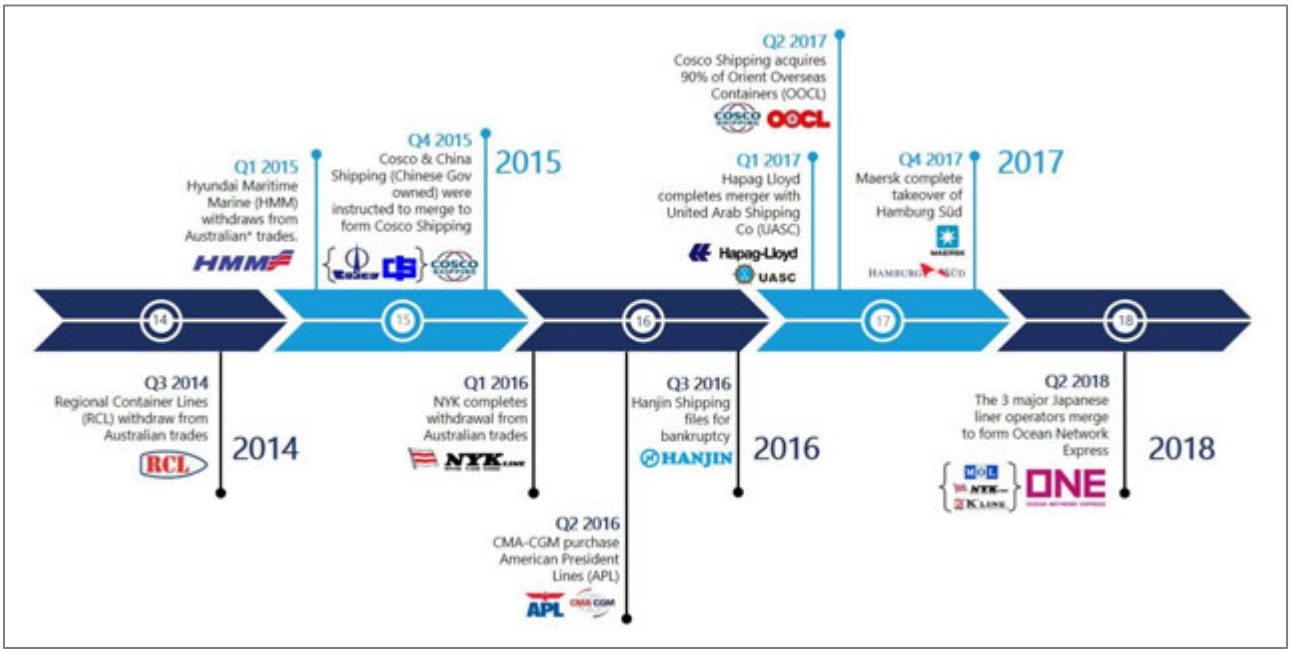

Figure 4: *Timeline showing the M&A activity over the past decade with some of the major global liner operators. *Note Hyundai Merchant Marine returned to the Australian trades in 2019.*

Reliance on Relay Hubs

Recently relay hubs (particularly in South East Asia) have gained a reputation of being extremely efficient and well-run operations. However, since the spike in global volumes, and Covid related supply chain issues, all major relay hubs in South East Asia (Port Kelang, Singapore & Tanjung Pelepas) are struggling to handle the level of trade transiting their ports. At one stage in mid 2021 each of these ports had a waiting time of nearly a week. Some of this stemmed from upstream issues in Southern China, Covid related issues as well as one off events such as the Suez Canal blockage.

These delays severely impacted on Adelaide, with six of our seven services calling via South East Asian relay hubs. Shippers were doing their best to avoid relay services and endeavoring to find alternative routes via direct services through Melbourne or alternatively the importer/exporter change their shipping mode from containerised to bulk/break bulk shipments, impacting on storage and inventory holding costs.

With restructured services, Adelaide lost direct access to North Asian markets in November 2019, and today we have near complete reliance on transhipment through South East Asian relay hubs to service this market. Under normal operating conditions this would be workable, however when these relay hubs are dysfunctional this this has a material impact on the supply chain at a local level.

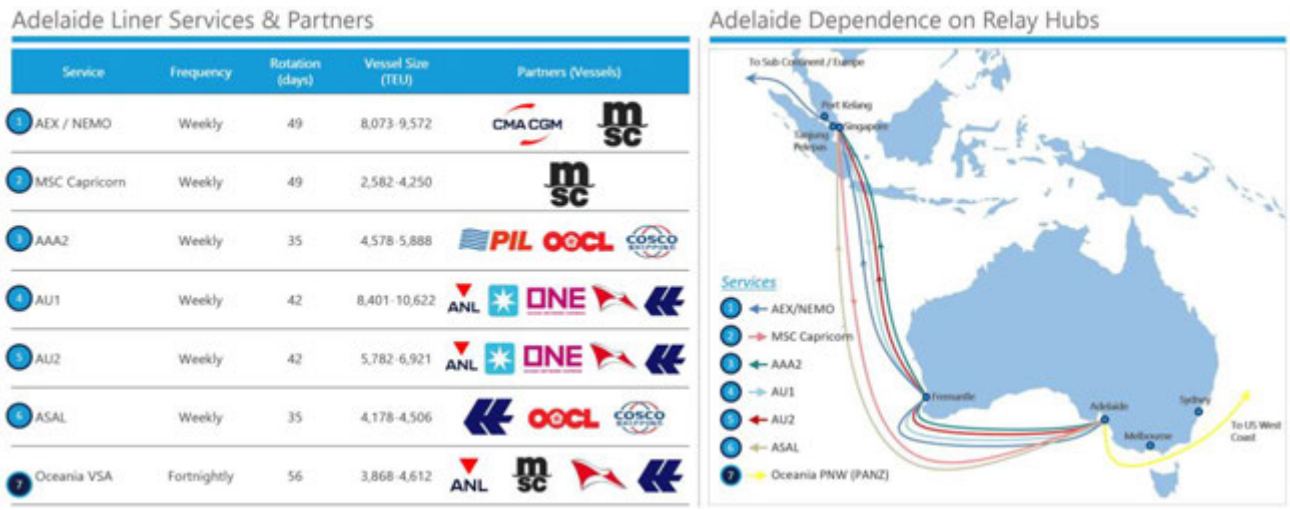

Figure 5: *Highlights Adelaide liner services and their almost complete reliance on relay hubs to access overseas markets. Under normal operating conditions this works fine but since late 2020, transhipment hubs have been plagued by delays which has resulted in multiple delays for Adelaide.*

Industrial Action

During the past 2 years all of the Australian container terminal stevedores have undertaken Enterprise Agreement bargaining. With the exception of South Australia, these negotiations have been drawn out and have impacted operations at all Australian ports. Disruptions include not only bans under prescribed Protected Industrial Action, but also unprotected action which include 'go slows', rostered sick days and refusal to act in higher graded positions resulting in lack of available staff. All of these types of action considerably impact the operating viability of a terminal.

These delays flow right through the supply chain impacting on transport companies, empty container parks, importers, exporters and warehouse operators. This industrial action on the eastern seaboard not only hurts the incumbent stevedore, but also impacts on upstream ports such as Adelaide with numerous bypasses directly attributed to industrial delays from other interstate terminal operators.

Stevedores enjoy extremely favourable working conditions in comparison to other heavy labour roles, and in comparison to other marine functions and yet there is no evidence their representative union is doing anything other than to further increase those conditions.

Schedule Integrity / Off Window Vessel Arrivals

Modern liner schedules are setup to offer a weekly service on a fixed window, this in turn ensures importers and exporters certainty about arrivals and departure of cargo. For the past 18 months the arrival pattern of liner vessels has been extremely erratic, culminating in the last quarter of 2021 where not a single vessel arrived in window.

- Most services are now so far behind proforma schedules, the system we have in place to measure schedule integrity is completely redundant.
- Presently vessels are serviced in order of arrivals, with the exception where a delayed vessel may accidentally land in window from an earlier voyage.
- In the current climate, vessels are being serviced as they arrive, with next to no consideration given to contracted windows. Due to the number of bypasses more often than not most vessels can be berthed on arrival without any delay.

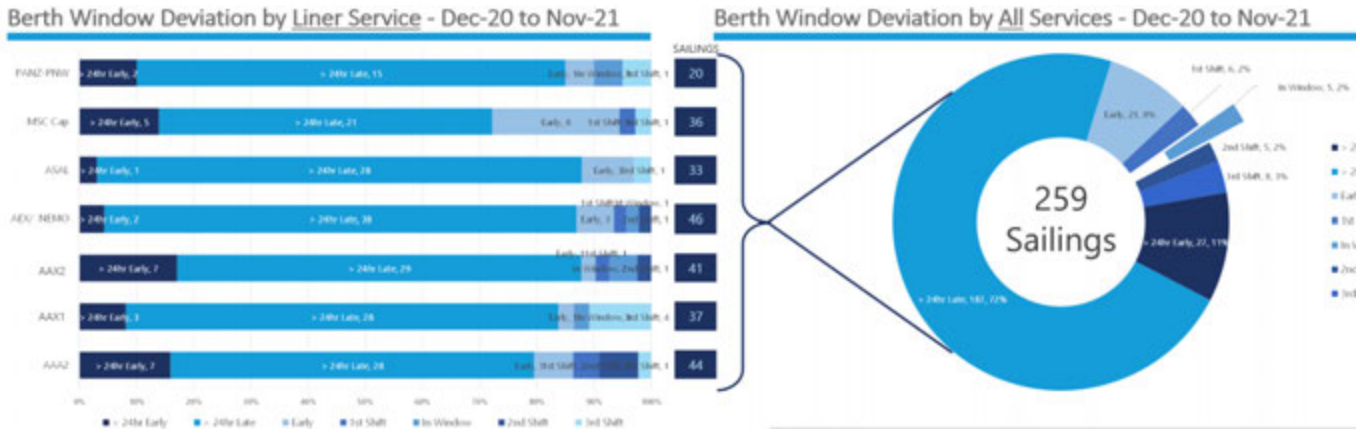

Figure 6: *By the end of Calendar Year 2021 virtually no vessels were arriving in window, the number of calls was some 25% below budget.*

High Productivity Vehicles / Rail Access

- In Q4 2021 Adelaide container terminal volumes handled through the gate by High Productivity Vehicles (HPV) hit the 59% mark. HPV is classified as a Road Train or higher or 11 axle up to 15 axle (see below).
- All of South Australian major export catchment areas are now serviced by HPV vehicles – Riverland/Sunraysia, Mid North and Port Pirie / Port Augusta.
- The biggest shift in transport operations in recent years has been larger transport companies now consolidate their daytime truck movements back to their yard rather than direct into the terminal and employ the use of road trains to shuttle between their yard and the terminal 24/7.

- This has resulted in a big shift from daytime to midnight operations where road train operators typically attain far better turnaround time cycling trucks during off peak shifts rather than competing with the premium daytime zones.
- This change in operation has proved beneficial in reducing daily truck turn time for all terminal users.

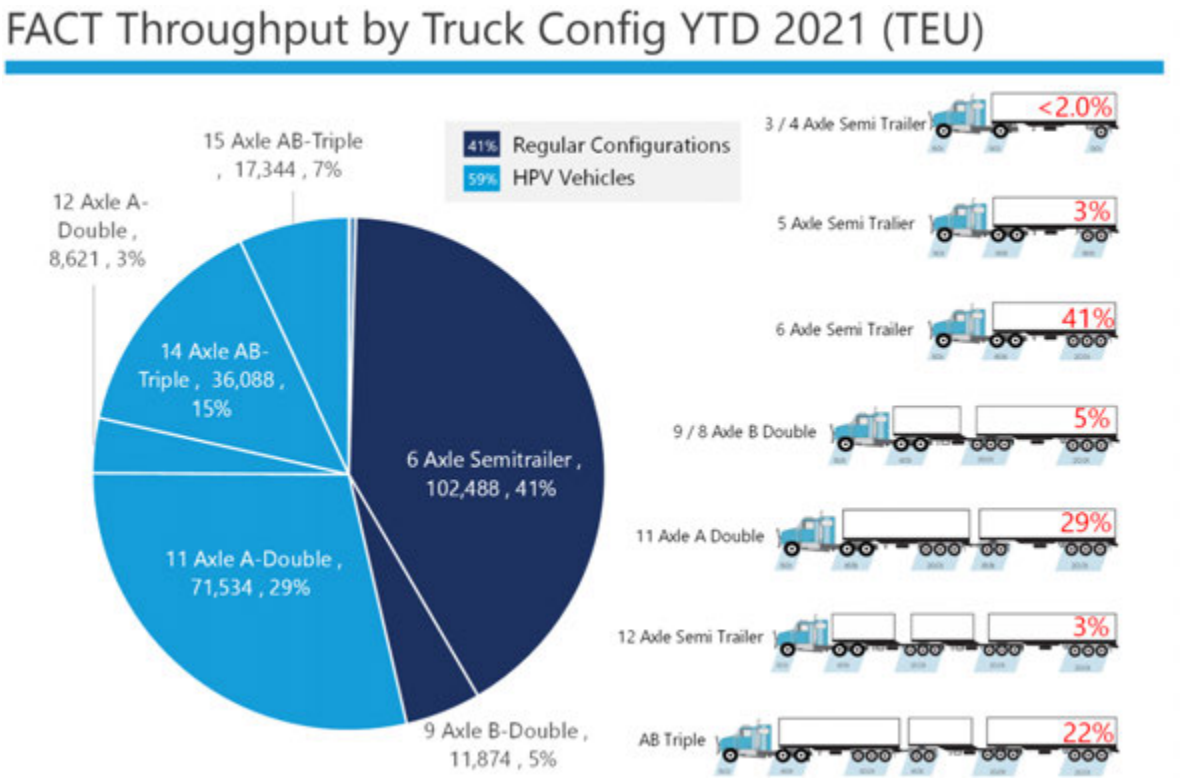

Figure 7

The Adelaide Terminal has excellent access into the port from both a road and a rail perspective. Access outside the terminal has been future proofed for well into the foreseeable future, with on dock rail bringing containers direct into the terminal and the recent upgrades to the Port River Expressway and the Northern connector which allows access from HPVs from the major catchment areas north of Adelaide for export cargos. The uptake of HPVs in recent years, and the opening up of the South Australian Road network to accommodate HPV vehicles, is increasingly working to the detriment of rail. As more HPV friendly roads are gazette on the network - we increasingly see rail becoming less viable. This is particularly true for some of short haul rail operators that operate shuttle trains from just north of Adelaide.

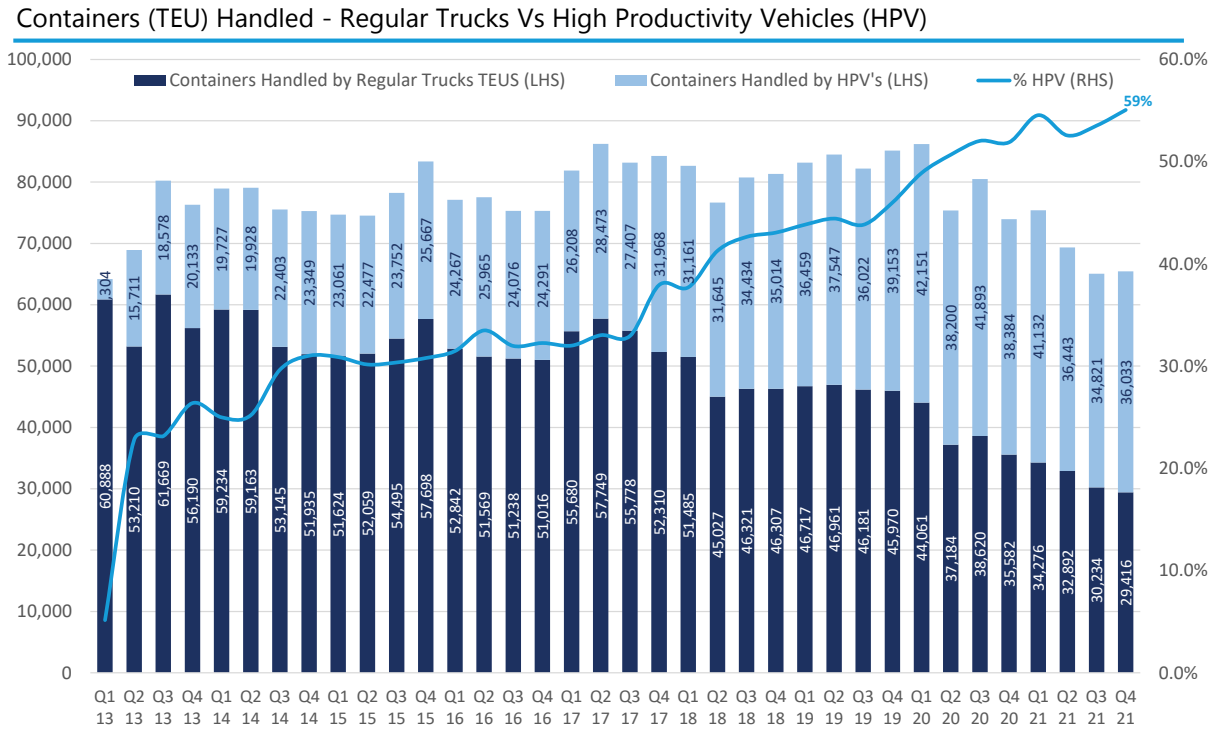

Figure 8

Terminal Performance & Benchmarking

Currently the Adelaide Terminal is monitored for performance and pricing by a number of statutory bodies:

- **Container Terminal Monitoring Panel** (CTMP) – South Australian State Government statutory body which focuses on key productivity benchmarks (sample of productivity measures attached).
- Waterline **Bureau of Infrastructure & Transport, Research, Economics** (BITRE) – port statistical information that is collated for all major Australian stevedores and reported on a "by port" (not terminal) basis.
- **Australian Competition & Consumer Commission** (ACCC) – collates and reports on financial and operational performance, as well as observations regarding key developments within the sector.

In 2021, the World Bank and IHS Markit produced a Global Container Port Performance Index based on 2020 data. Whilst none of the Australian port Terminals faired particularly well, there are a number of other considerations that should be taken into account:

- Most Australian terminals do not have the container throughput conducive to high productivity rates in comparison to some of the other higher ranked ports.
- Many of the higher ranked terminal are transhipment terminals – that allow virtually entire vessels to be stripped then reloaded. Compare this to a smaller port such as Adelaide, which in comparison has smaller exchanges and may have as many as 15 origin / destination ports which entails "accessing" many bays on the vessel for a small number of containers in each bay – far less productive.

- Size of vessels also plays a part and it is noted that Australian terminals did fare better when categories of vessels that call Australia were taken into consideration – in some of these vessel categories Australian terminals showed considerable improvement.

It is difficult to compare any two container ports as they could be vastly different in operations and geographical layout. Notwithstanding, the data used was correlated direct from the vessels, taking into consideration all factors, time at anchorage (not always in the terminals control), time alongside, crane intensity, vessel size and exchange. It is extremely difficult to come up with a measure to benchmark global performance in any meaningful way. The real value in the World Bank and HIS Markit report appears to be primarily as a marketing document

2. Maritime Logistics Sector

Port Planning

FPH has recently completed its 50 year Port Masterplan encompassing all of the seven ports in FPH's portfolio. The study provides strategic context and direction for FPH in the management and development of all activities into the long-term. It includes an analysis of, and opinion on, what might affect the ports in the longer term from trading and strategic perspectives, and how this future state vision is influenced, both globally and regionally.

The importance of planning and goal alignment with State and Local Government is critical for long term productive service levels in and around port precincts, given adjacent land to the port is critical to the Masterplan development and is managed by third parties. Urban encroachment on ports will continue to be a major threat for all ports, with decisions made on land developments near ports made by State Government. Bipartisan port planning is critical for long term sustainability, and this includes road and rail routes servicing the ports with the need to ensure there is adequately planned port buffer zones between residential and 24/7 operational ports.

The ports' ability to move with global changes in shipping is absolutely vital for efficient and long-term sustainability. Dredging campaigns to deepen and widen channels and berthing facilities is a critical strategic requirement for all ports that do not have natural deep water. FPH has worked with State government to successfully complete major dredging campaigns to deepen and widen the Port Adelaide channel to ensure that the port remains a viable option for larger container shipping lines to call Adelaide which service importers and exporters. We recognize that there are state based agencies and regulations that govern these initiatives, however as a port operator, changes to state regulations over time is another threat to the ability of a port to adapt to changes in the shipping industry and placing greater emphasis on appropriate consultation.

3. Industrial Relations, Labour & Structural Shifts

Industrial Relations

The inability of stevedores to reach agreement with the MUA during Enterprise Agreement negotiations has had significant implications for national container supply chain efficiency. The ability to undertake protected industrial action (PIA) once Enterprise Agreements have expired, irrespective of the nature of the operational restrictions, disrupts stevedore quayside and landside service provision and imposes additional costs on both the stevedore and broader supply chain participants.

Though FACT was able to reach 'in term' agreement and not endure PIA in 2021, the South Australian supply chain has still experienced disruption due to chronic vessels delays as a result of PIA at other Australian container terminals. The supply chain implication is that importers incur delays in accessing imported goods and exporters experience delays in 'getting' goods to market. It follows that the significant impact on third party supply chain participants should be carefully considered when PIA ballot implications are determined by the Fair Work Commission.

Labour Supply & Skills

Workforce flexibility and scalability has been a major focus for the Flinders Group, particularly given the predominantly fixed cost nature of labour supply arrangements and the challenge presented by the disrupted container supply chain and the resultant variability in operational demand.

FPH's recent experience indicates that accessing the employment market for entry level stevedores has not been problematic. Accordingly, FACT's operational workforce capability has not been compromised by the 'tight' labour market, having recruited 45 stevedores in the past 8 months. This is entirely due to the extremely favourable labour rates and working hours enjoyed by stevedores.

FACT stevedore upskilling is performed in house post recruitment, ongoing upskilling programs are a cost intensive undertaking due to high labour costs and licencing requirements across various equipment types. There are currently no accredited training packages for stevedores under the Australian Quality Training Framework, rather they utilise individual skill training and licence accreditation which can result in decentralised training management and record keeping. This also reduces the ability for employees to work across businesses.

A further inhibiting factor exists with the classification of equipment by Safe Work Australia. As much of the maritime equipment such as cranes and straddles is unique to the industry there is no separate classification for licensing and training. Therefore, to operate a marine specific crane often means staff have to be trained to operate a much heavier machine, such as is in use in the mining sector, in order to obtain a license. This significantly increases training costs and time required to be considered proficient.

COVID-19 employee unavailability related to infection or close contact isolation has not materially affected FACT's operational service delivery to date to the extent of Eastern seaboard terminals, but has resulted in up to 9% of the stevedoring workforce unavailable on a daily basis.

Other critical port operational labour services is marine pilotage. Marine pilots navigate in and out of ports all vessels with Australian waters. Each marine pilot requires extensive training and experience in piloting specific ports. These are specialised skill sets which are critical to port operations and service levels which are not easily transferrable.

Marine Pilots also operate in a difficult industrial landscape with Protected Industrial Action being a regular feature in the last two years. South Australia are currently negotiating with Marine Pilots and protected action may be a consideration which will further impact the total supply chain.

Structural Shifts - Nature & Type of Work

For non-automated (manual operational mode) container terminals such as FACT there is an increasing reliance on the adoption of technology to drive operational efficiency gains. FACT has already undertaken a project involving AI logic to optimise container movement decisions within the terminal.

This highlights an important theme that as technology is increasingly adopted the skillset requirements of employees at the user interface differ from traditional requirements necessitating a different approach to selection and training processes.

It follows that stevedore companies are now required to identify employees who are capable of upskilling and are comfortable with increasingly complex technological interfaces, particularly as stevedores and the broader supply chain undertake digital transformation.

4. Infrastructure & Constraints

Port Efficiency

In comparison to many of the other Australian mainland container terminals, Adelaide is fortunate that it is served well by both a sound road and rail network. The Adelaide Container Terminal also has considerable port land available for future expansion and it is likely at some point will look to change its mode of operation within the existing footprint.

Figure 9: *Various Terminal modes of operation. Presently Adelaide operates a Straddle Carrier (S/C) operation which offers the least capacity of all the modes. Sometime in the near future the terminal will look to change this mode to allow for a far greater capacity.*

Rail Access

The Adelaide Terminal presently operates 2 x 620m rail spurs and handles five liner rail services per week, for approx. 37,000 TEU rail movements per annum - which translates to around or 9.9% of total terminal throughput. All of these rail movements are export movements - any imports are delivered by road, typically around the metropolitan region.

FPH recognises the importance of rail for the future development and growth of the port. This is likely to become increasingly important over time, as can be seen by the growth of other Australian Terminals where urban encroachment is occurring and road access has become increasingly difficult as volumes grow and terminals expand their footprints.

Presently, the Adelaide Terminal does not have to contend with many of the issues, due mainly to our relatively small volumes, which do not pose any immediate concerns. In this regard Adelaide has benefitted from its relatively late start in containerisation, with appropriate road and rail networks established at an early stage which, has future proofed the terminal for a number of decades to come.

The most serious concerns in relation to urban encroachment which come not just from housing, but rather the nearby Osborne Naval Shipbuilding Precinct, which has re-routed a number of roads that subsequently caused major traffic delays at rail crossings for up to 30 minutes at a time. The closure of unimpeded road access to the Port Adelaide Inner Harbour bulk and general cargo berths, when considered in addition to the Osborne situation, has meant the main access is now impeded by rail crossing activity impacting on port efficiency into/out of those port areas. This highlights the importance of long term strategic planning by State Governments on potential changes to road and rail routes to ports and the necessary flow on infrastructure requirements such as grade separations.

Another area of concern for the viability of rail is the high rate in South Australia of the upgrading of major arterial roads leading to the container terminal that have the capability to handle HPV vehicles. The road network is gazetted to handle AB-Triple Trucks (equivalent of 5 x 20' containers) all the way into the container terminal. This is making it difficult for rail operators to compete with road – especially as 70% of rail traffic is considered short haul cargo - <100km from the terminal.

The improvement in productivity in vehicles has also had an impact on regional rail connectivity to regional ports such as Port Lincoln, where the rail line has recently been closed with all grain deliveries to the port now being received by HPV transport. Regional ports must have a symbiotic relationship with its surrounding stakeholders in that this is where the most urban encroachment has occurred over time. Efficiency in supply chains into these ports must ensure consider social impacts.

Container Equipment Imbalance

On paper, Adelaide appears to be relatively balanced as far as imports and exports container types are concerned (see Figure 10.). However, Adelaide has a high requirement for specialized containers - flexi grade (flexi-wine), food quality (grain), hay quality (hay) etc. this entails around 60,000 TEU per annum of containers having to repositioned into Adelaide to satisfy these export requirements.

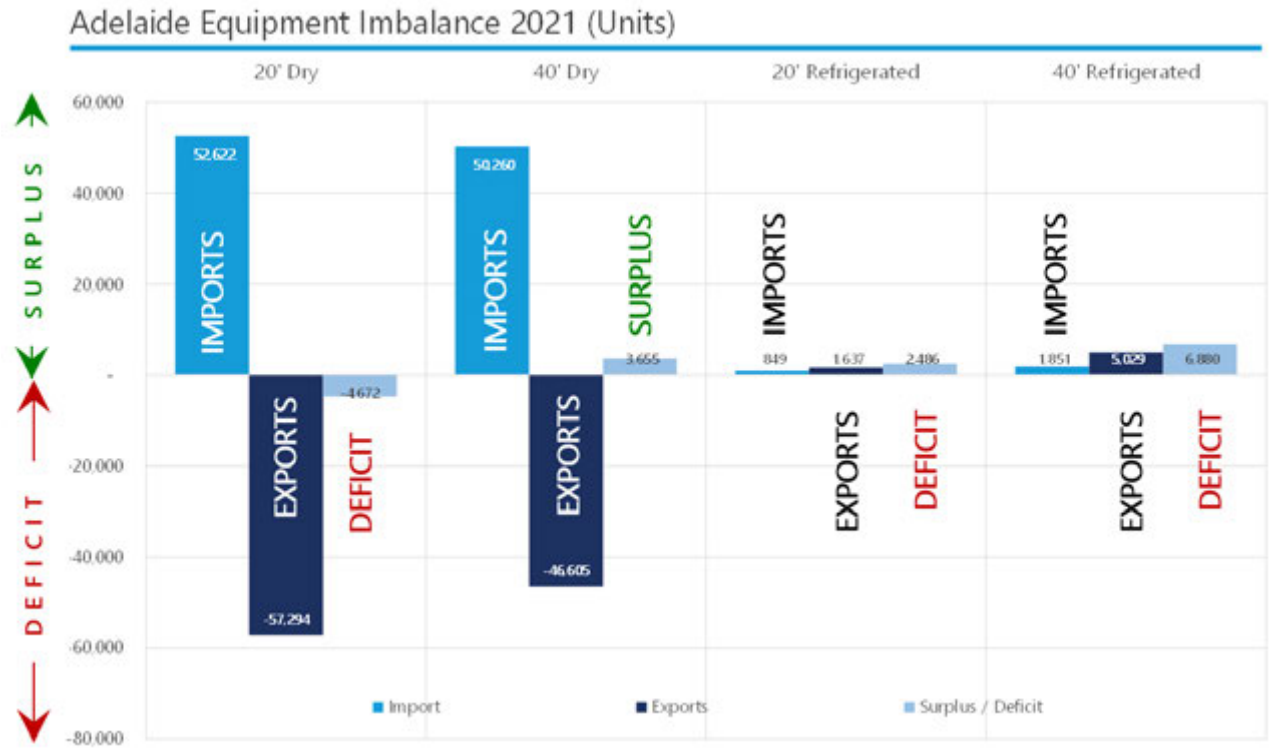

Figure 10: *Adelaide equipment Imbalance, identified by container type. Containers types appear to be balanced there is an additional 60,000 TEU repositioned into Adelaide from the eastern seaboard to look after specific export cargos.*

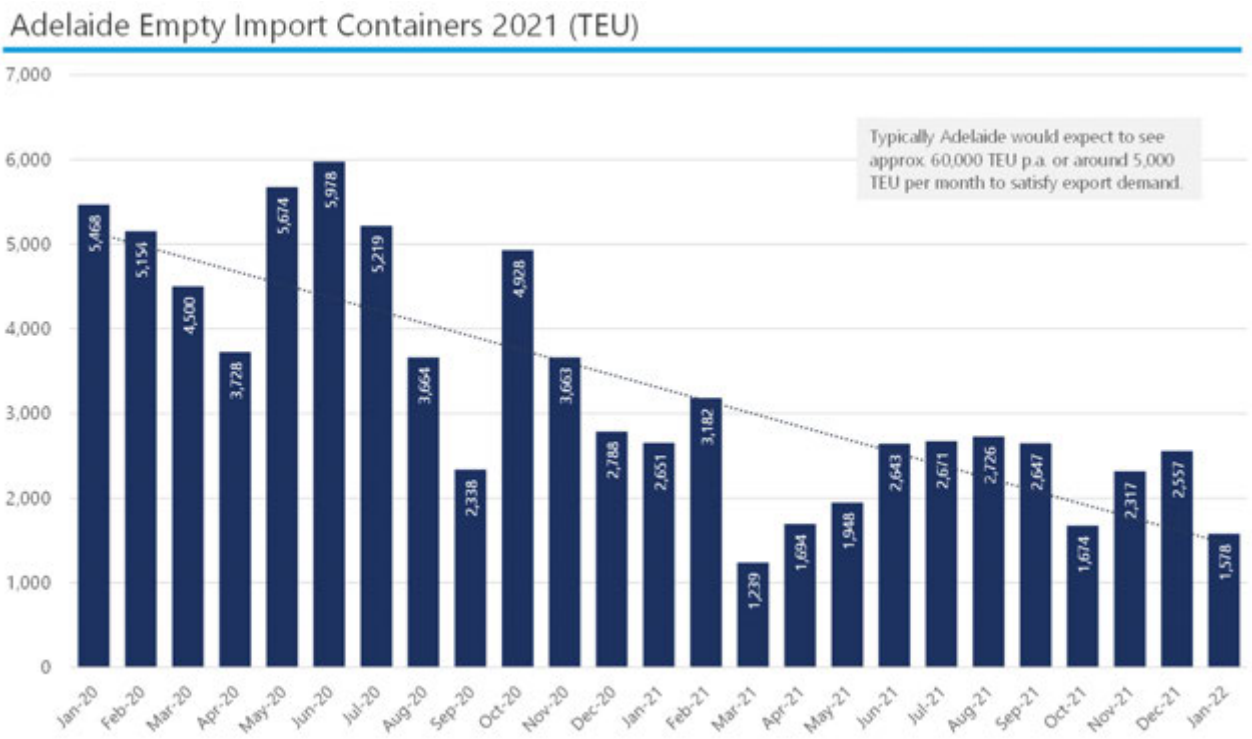

Figure 11: *As can be seen above, empty containers repositioned into Adelaide has dwindled significantly in recent months. Under normal operating conditions Adelaide would see around 5,000 TEU p.m. repositioned in to accommodate exports.*

The volume of empty containers being repatriated to Adelaide has fallen significantly due to a number of factors. In the current financially lucrative shipping environment, lines have the choice to reposition an empty container direct from Sydney to Adelaide for a low revenue, back-haul, export load, or send the empty container direct back to Asia (bypass Adelaide) where it can command as much as USD20,000 in other trade lanes (head-haul). In many cases unless the Adelaide export load is a high paying cargo, the lines are choosing to reposition the empty container directly back to Asia in order to attract a high revenue cargo.

- This is impacting mostly low revenue cargos as in many instances the revenue generated for the Adelaide export load barely covers the cost of repositioning the empty unit from Sydney to Adelaide.
- Furthermore, Adelaide cargo is likely to be heavy, maxing out the deadweight of the ship. In the current operating environment of high demand (full ships) this export slot could easily be filled with a full Sydney export back to Asia, ignoring Adelaide completely, or with an empty container that could be turned around faster in Asia for a much higher yield.

In a similar vein, lines are choosing to turn around de-vanned Adelaide import containers that could be used for an export load. Lines are singularly focused in repatriating the container back to Asia as fast as possible to pick up a head-haul load. Many low revenue export commodities such as grain, hay, stockfeed are simply not moving as they are unable to secure containers for such low revenue cargo.

5. Technology & Innovation

Terminal Artificial Intelligence

FPH recognises that investment was needed in order to sustain business practices that aim to deliver long-term supply chain solutions for customers to deliver faster distribution times, provide greater accessibility and capacity, reduce environment and social impact, reduce risk and increase efficiencies. FPH has identified that to achieve this, we must embrace digitalization, innovation and technology in order to become a smarter business and Smart Port.

FPH identified the opportunity to apply frontier Artificial Intelligence (AI) technology to optimise our yard management activities at Flinders Adelaide Container Terminal (FACT). The efficiency and cost of handling containers into, and out from, the yard onto ship, truck or rail is critical to the productivity of the supply chain. There are a significant number of factors that influence how a container must be positioned in the yard and given the scale and complexity, it was identified that AI would be best positioned to optimise the movements and stacking of containers.

FPH has been working with Adelaide artificial intelligence company Complexica for the past 2 years on optimising container movements through the Adelaide Container Terminal. The decision-making process about where containers would go in the yard and which straddle is allocated the task are based on a multitude of criteria. Up until this point these decisions have been left up to humans or set of fixed rules generated from the Terminal Operating System. The aim of implementing this AI system is to optimise these decisions for the TOS and terminal staff and in turn relays the decision back to the TOS for execution.

FPH intends to increase its AI adoption to further expand the optimisation across our port operations and services, supporting the pursuit of efficient, productive and cost-effective port supply chains that benefit all users.

Data Sharing Throughout the Maritime Industry Supply Chain

1-Stop is the primary data portal for the maritime industry. It was setup as a joint venture between stevedoring companies Patrick Stevedores and DP World in the early 2000's to provide EDI translation and as an integration hub for all the different message types flowing between the shipping lines, transport companies, Australian Border Force, Quarantine and the wider logistics industry - such as importers, exporters and freight forwarders. Initially setup as a means of sharing development costs between the two major stevedores with the introduction of the export Electronic Pre-Receival Advice (PRA) – the platform has developed into a serious concern for the two owners whereby they are able to charge both membership and a per message fee for many of the tens of thousands of messages that move on a daily basis.

1-Stop predominately operate in the Stevedore, Shipping Line, Transport Company sphere, but importers, exporters and freight forwarders also so have restricted access to varying degrees.

Recently, a new entrant Container Chain has emerged who predominately focuses on Empty Container Parks, Shipping Lines and Transport Companies with a focus on Vehicle Booking Systems to the Empty Container Parks (ECP's).

Around 5 years ago another entrant Matchbox Exchange entered the market with the express purpose of bypassing empty parks. The concept is an open market digital platform for the reuse and exchange of shipping containers between transport companies. In its simplest form, it would negate a devanned empty import container having to be de-hired to an ECP (costs incurred) and then delivered out from the same ECP (cost incurred) for export packing. The benefits are to the shipping line (nil costs for handling at the ECP) and potentially to the importer and exporter who may be able to reduce transport costs if the importer and exporter are co located in a nearby area.

All of these entities serve worthwhile purposes, but generate revenue in their own space and none of them talk to one another. Attempts by Port Authorities and other industry participants to establish a true Port Community System, to the benefit of the wider maritime logistics community have been fruitless, as each of these industry participants operate in their own specific space, do not communicate and are protective of their revenue streams. Perhaps Blockchain may be a way of short circuiting this stalemate.

FPH is committed to the meeting the requirements of its users and therefore to provide the digital infrastructure and services that ensure transparency and support optimised planning and decision-making. As global supply chains drive for greater connectivity this will be a material disruptor and critical for ports, terminals and supply chain participants to be live and responsive to the challenges and changes. FPH is partnered with the SA Government and other industry participants in pursuing and designing solutions to meet these requirements for the short, medium and long-term.

Technology to improve port safety

FPH also explores all opportunities to deploy technology to meet improved outcomes – including safety. Flinders Ports pilots use a laptop/tablet with proprietary software in conjunction with external sensors that receive satellite signals to give pilots a visual and accurate representation of the ship with respect to the ship's position, navigation through the water and surrounding areas. Flinders Ports is using the same technology and trailing the concept of "Shore Based Pilotage" i.e. piloting the vessel without having the pilot on board but rather piloting the vessel from the Vessel Traffic Services (VTS) centre. The hardware is set up on the ship and is connected through 4G/5G to the VTS centre and retrieved by boat at the end of the pilotage. The main advantages in Shore Based Pilotage is that the marine pilot does not have to climb 3rd party vessel ladders to get onto a ship and improved vessel situational awareness which assists in risk reduction.

FPH is grateful for the opportunity and appreciates that there may be the need for further follow-up on matters raised here and what the Commission gathers through this process. That said, FPH welcomes any further discussion that the Commission would find beneficial in relation to our port business and operations.

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