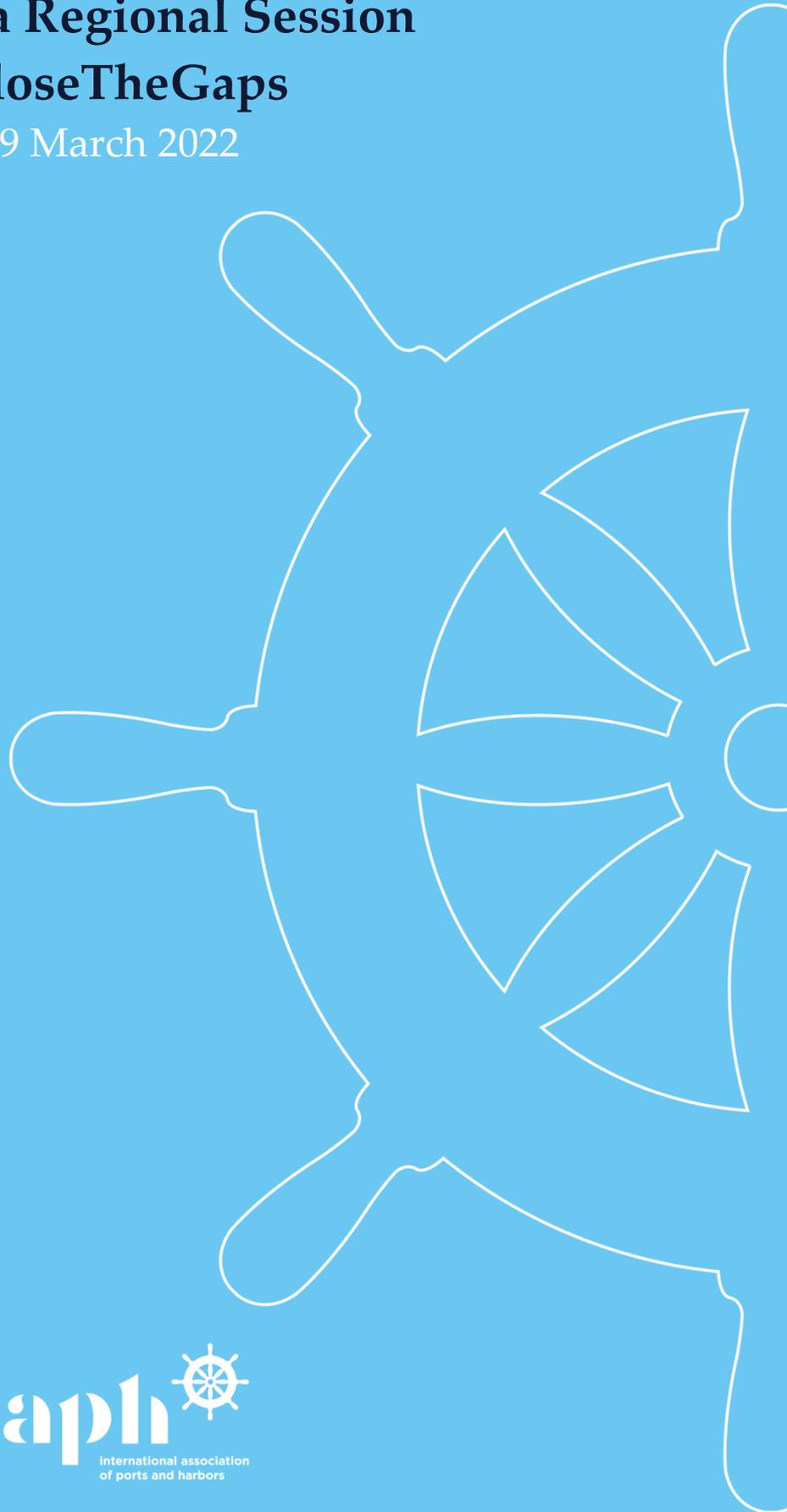


IAPH
East Asia Regional Session
#CloseTheGaps
29 March 2022



IAPH East Asia Regional Session #CloseTheGaps – 29 March 2022

EXECUTIVE SUMMARY

The enclosed provides a summary of proceedings from the IAPH East Asia Regional Workshop examining port competitiveness and identifying gaps to address in ports and port-related infrastructure and governance that took place on March 29, 2022.

The purpose of this document is to provide succinct highlights of specific gaps as well as proposals and suggestions raised at the Workshop to deal with those gaps in port infrastructure.

A more detailed analysis of the transcript and recording will be fed into the main workshop sessions of the IAPH World Ports Conference 2022 which will deal globally with the six areas of interest analyzed by a study that the University of Antwerp prepared for The World Bank in 2020¹, namely connectivity and accessibility, efficiency, digitalization, carbon emissions of shipping, shipping costs and regulatory environment.

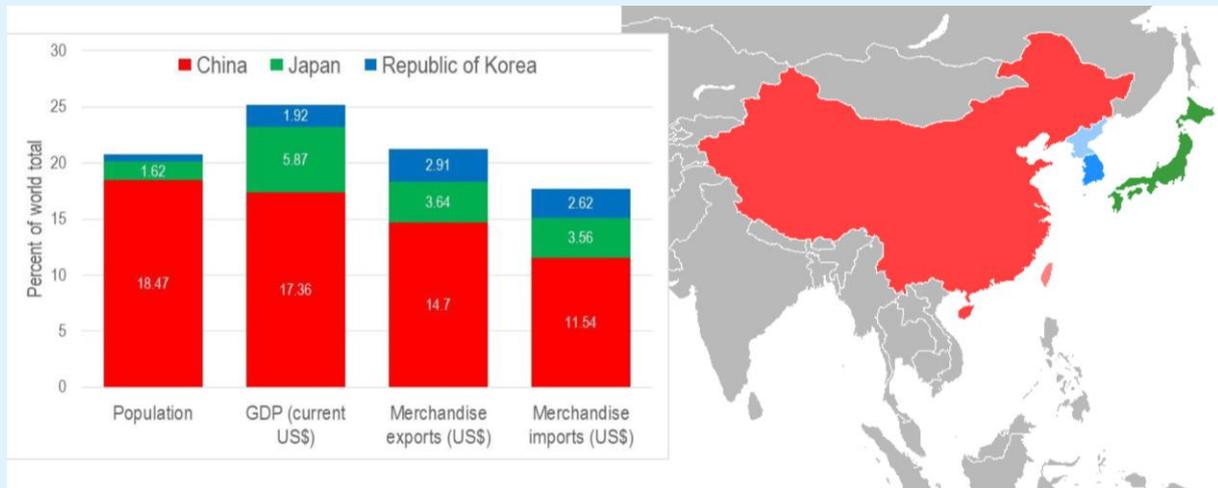
The three main gaps identified for this region are digitalization, carbon emissions of shipping and regulatory environment.

1.0. HIGH LEVEL OVERVIEW OF THE REGION IN TERMS OF PORT INFRASTRUCTURE GAPS

In the first instance, despite the relatively low number of countries included for this particular region, it was noted that it accounts for 25% of the world's GDP and manages the highest volumes globally, with a staggering 370 million TEU handled last year. To put this in perspective, by comparison over the same time period the whole of Europe handled around 100 million TEU and 55 million TEU has been managed by ports in the United States. It was also noted in the pre-workshop research and the expert intervention that the world's most efficient port operations are located in this region and that it is the best connected globally.

¹ Aronietis, R., Van Hassel, E. and Vanelslander, T. (2020), Maritime connectivity study for The World Bank: the state of developing country ports and maritime services: a global review.

East Asia: A leading economic region



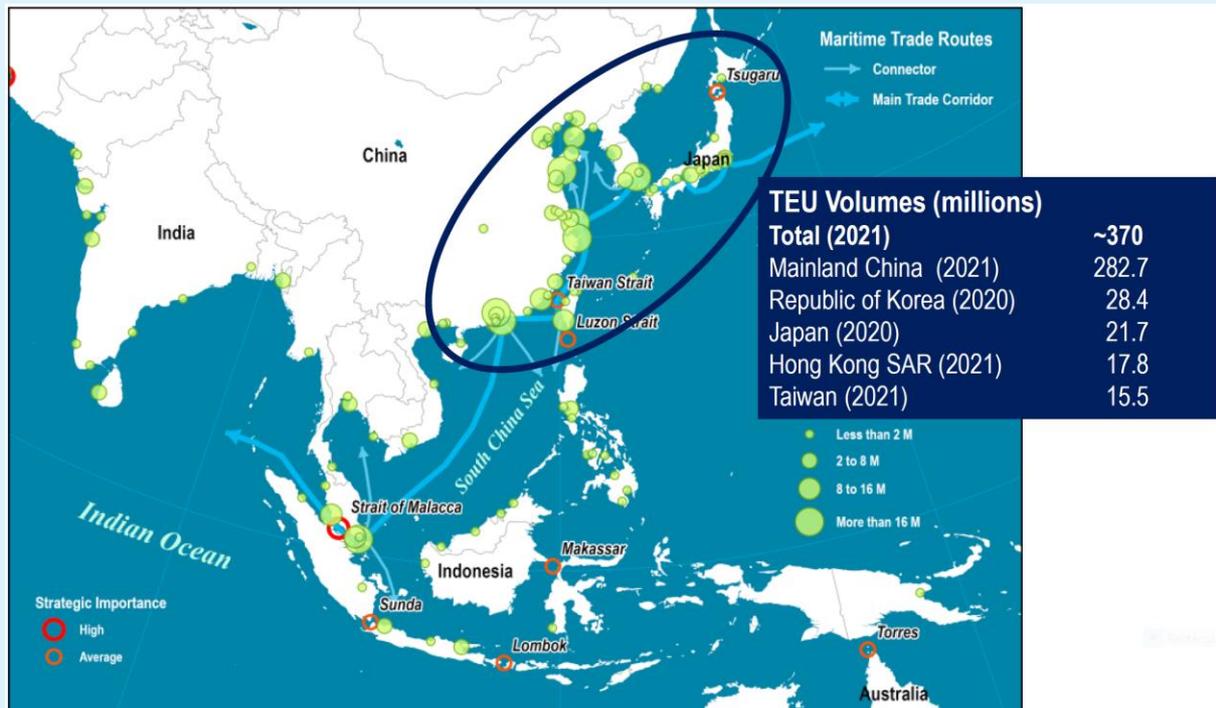
Source – Theo Notteboom compilation based on UNCTAD Maritime Country Profiles (data for 2020)

The territory is characterised by two contrasting landscapes.

On one side there is China with its vast hinterland which has become increasingly connected through the Yantse waterway connecting the East coast ports as well as by rail, with the Go West and Belt and Road initiatives resulting in significant investments in rail infrastructure not just for Chinese cargo, but also for the new silk route connecting China with Europe via Central Asia. Prior to the geopolitical problem of the Russia-Ukraine conflict, growth of traffic in this route as an alternative to shipping via Suez has started to gain momentum with around 1 million TEU being moved in 2021 compared to 13,200 TEU back in 2013.

On the other side of the coin the island economies of Japan and Taiwan with South Korea a quasi-island economy are characterised by short distance inland and waterway corridors which are often protected by cabotage rules.

East Asia: a dense and cargo-rich port system

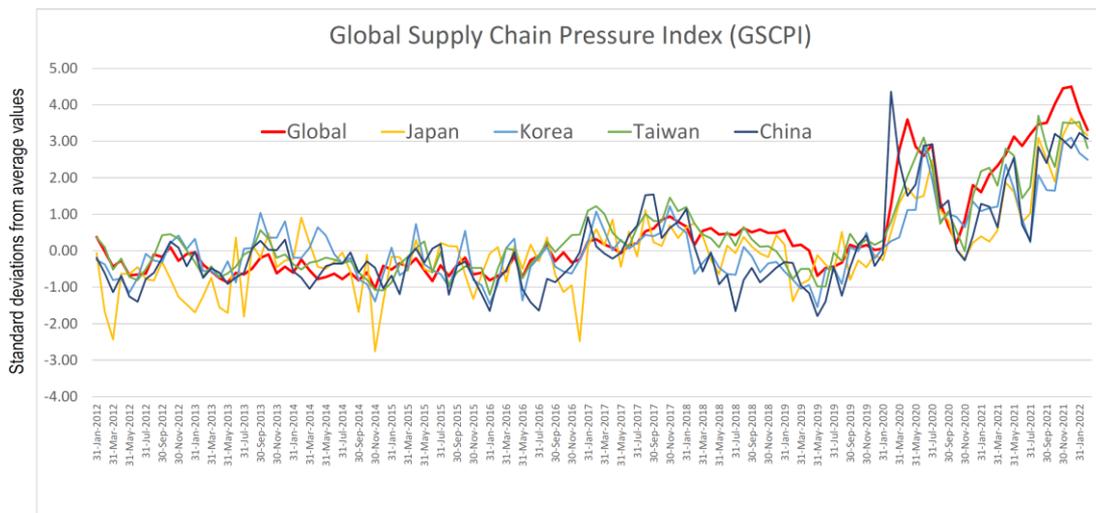


Source map: porteconomicsmanagement.org

Despite its comparatively high efficiency and connectivity the region has not escaped from the challenges posed by the global pandemic which broke out in 2020 and which continues to impact the countries, especially China in recent months with widespread lockdowns in major port cities such as Shanghai and Ningbo.

East Asia: Highly productive terminals facing increased supply chain disruptions

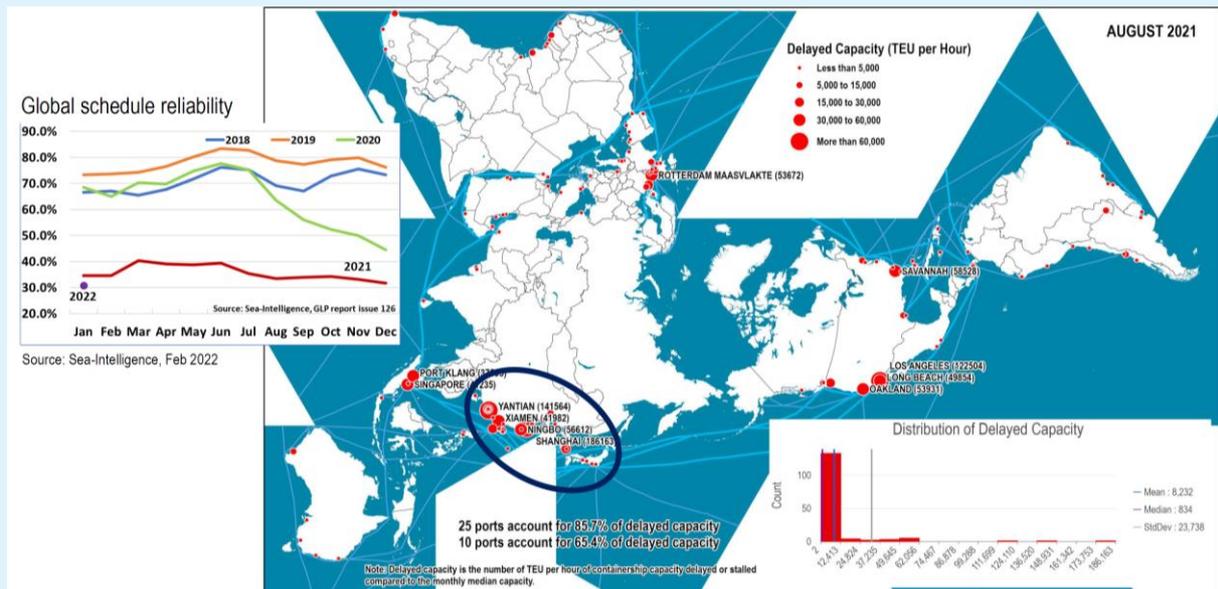
East Asian container ports are the most efficient in the world and dominate the Top 50 spots of the new global Container Port Performance Index (CPPI) launched by the World Bank and IHS Markit, but ...



Source Theo Notteboom based on Di Giovanni et al. (2022)

The above infographic is a reflection of several disruptions on both global and regional levels including financial crises, natural disasters, extreme weather and now the pandemic with the local mass lockdowns in port cities. These factors have all impacted ports in the region to varying degrees. The most recent impact of the huge swings in supply and demand and the damage this caused to the global supply chain has meant that this region's ports, as stated the world's largest for volumes, is directly impacted by global phenomena, most notably the huge swing upwards in demand for consumer products on the main East-West container trades.

Container Delayed Capacity in TEU per Hour at Port, August 2021



Source: Jean-Paul Rodrigue (2022), IAPH North America Workshop

The direct impact of congestion in both US West and East Coast ports as well as in North West Europe have had knock-on effects to all the major ports in East Asia which account for a high percentage of delayed capacity, high congestions levels with ships awaiting at berth for weeks and the subsequent impacts on schedule reliability, equipment availability, landside hinterland transport congestion and overall increases in carbon emissions at sea, at berth and on land. Every port call that is either dropped or severely delayed always has knock on effects on the following port calls after that.

This highly uncertain environment which has nearly brought the collapse of the global supply chain with it has led to the call from some of the port users to get all players (ports terminals, shipping lines, intermodal operators, port service providers and supply chain solutions providers) to change from the mentality of optimising costs and sweating maritime assets, land and equipment to the maximum as it is simply not sustainable in the long term.

It was suggested that a move be made towards creating more certainty by building in shock absorption to the entire maritime transport chain. This would enable everyone to be better prepared to confront the next crisis when it happens and could create value for shippers by moving from a reactive to proactive state of affairs where in an ideal world, visibility of cargo and its fluidity would cross over to predictability in the supply chain.

This port user argument was considered as a major change being asked of shippers previously working to Just-In-Time (JIT) and the lowest cost denominators to having to build in inventories and to be prepared to pay more to get their cargo delivered more reliably. Even if problems of the absence of 24/7 availability of trucks or warehouses were solved, it was also argued that even with this change of mentality and overall improvements in efficiency of existing port infrastructure, it simply would not be enough to absorb the extra demand forecasted in the future. Extra terminal capacity and new terminals will also be needed to ensure absorption of future shocks and to achieve greater risk mitigation. In a free open market where up to 8 terminal operators are competing for the same transshipment cargo at the same location, it took one port authority a lot of work and a significant period of time to be able to call for a new concession for a new terminal given the resistance of these operators who were in some cases working over their capacity limits (and making good margins), leading to docker unrest and heavy vehicle congestion in the city. Even then, there was a poor response from concession bidders as there was no floor tariff imposed by the authorities for terminal handling charges.

The port users continued by stating that a lot of the problems suffered by shippers in the region were caused by the lack of visibility of the status of their cargo. This in turn brings additional problems of finding trucker availability at the right time where supply is constrained to pick up or drop off a container without several hours of wasted waiting time in queues outside port gates due to lack of information on accurate berthing and departure times. One of the 10 leading shippers on the transpacific trade advised a panellist that they need to work and engage with a third party outside the normal suppliers in order to get a handle on the status of their cargo.

This points towards one of the three major gaps recognised in this region which is the need for digitization and the greater and more efficient exchange of data between all players in the maritime chain. The issue of data integration was identified as a major problem. All the ports develop and work their own platforms, with each one of them often taking an internalised approach to maximising processes. There is very little movement observed in lateral

movement of data between supply chain players in the region, with ports running their own platforms, structuring data in their own way and operating with different technical requirements. One port service provider recognised that their operations in 70 separate international locations involved 70 different ways of interfacing with public and private stakeholders due to local regulatory requirements. While fully cooperating with national authorities to become part of their national logistics ecosystem, port service providers often found that they were required to provide a significant amount of data without much being received back.

The phrase “train had already departed” was given for the idea that customers were prepared to pay information for information to assist in tracing their cargo and for better forecasting for their own processes. This form of digitalization was becoming a must-have in the eyes of port users and aiming to provide this was identified by more than one panellist as the key to adding value to the relationship with forwarders or the shippers themselves.

The other issue stated by several participants was the absence of an overarching regulatory authority to provide a legal framework for the structuring and sharing of data such as the ICC for INCOTERMS to coordinate this development. One port user also believed that a neutral, innovative approach towards data integration standards was preferable to one which involved governments such as the member states of the IMO who have their own agendas making compromises challenging. One panellist even hinted that the emergence of a game-changing solution provider that then ended up dominating the market (example of Microsoft was used) would at least mean the adoption of change across the board.

The example of eBill of lading was cited as an example where for this to work, regulatory intervention would be required at an international rather the national or regional level, otherwise the concept would not be adopted or accepted.

The regulatory environment in the region was explored, with the emergence in the region over several decades of bay and delta regions that offered a more integrated level of port development due to laws passed at national level. The 2011 amendment of the Ports and Harbors Act in Japan concentrated government investment on Keihin (Tokyo, Kawasaki and Yokohama) and Hanshin (Osaka, Kobe and Amagasaki-Nishinomiya-Ashiya) and connected all the peripheral ports to either Keihin or Hanshin ports. In China, the Port Law of 2004 brought forward further decentralization of port governance and corporatization of port

authorities. In the past decade large-scale port integration at the provincial level has taken place in China.

One port service provider and one port user explained how challenging it was to bring together and synchronise interests of terminal operators together with the port authorities. Sharing data between these two entities did present challenges in terms of what could be made transparent between them as private companies needed to protect certain commercial data. Governments and port authorities also withhold sensitive data on customs and import-export data. With significant investments in fixed capital assets at a port once a concession was awarded, a terminal operator (unlike a shipping line which can move between terminals) is locked into making a profitable operation work at that location and to attract shipowners to build up volumes.

Another example was cited with the passing of national legislation to merge two significant ports within 10 kilometers of each other which were previously fiercely competing with each other for cargo in order to create one single large port that could challenge mega ports in neighbouring countries. The complexity remains for decision making to be streamlined with the two mayors of the cities in charge of each port location, one CEO managing the combined entity, and all three having to report to a federal ministry. A comparison was also cited of airports from the same two cities being merged with a third city's airport in the interests of competing internationally with other hub airports in the region. This would have to be balanced against the risk of anti-competitive practices at the cost to the users.

On the subject of personnel (seafarers on board vessels, dock workers and port employees as well as truck drivers and other transportation employees) it was commented that greater attention would need to be given to their welfare through proper crew change policies at ports in the region, plus training and development given the enormous strain that all workers in the sector have been placed under during the pandemic.

On the subject of carbon emissions of vessels, there was a broad agreement that no one future fuel is likely to be adopted as a standard with several owners opting for different solutions in ship design and that it would be up to ports to offer multiple options in terms of fuels such as methanol, ammonia, LNG and biofuel. As this region is traditionally a major bunkering hotspot, a lot of investment would be required by both the public and private sectors to implement viable solutions in terms of bunkering infrastructure. It was pointed out that as this region was responsible for 25% of fleet ownership and 90% of shipbuilding

capacity, it had an important role to play in assisting the decarbonisation of the sector through innovation and investments in research and development. Port users confirmed that the availability of current and future low and zero carbon fuels would play an important role moving ahead in the selection of a port or terminal of choice. This gap in terms of not knowing which fuel(s) would emerge as frontrunners was identified as a risk for ports and shipowners, where one user has abandoned the chicken and egg situation and decided to put all their investments into a single zero carbon fuel.

2.0. HIGH LEVEL OVERVIEW OF WORKSHOP POINTS RAISED TO #CLOSETHEGAPS

Continuing on the subject of governance, port users commented on the need of legal certainty to be applicable for all ports in the region to be able to exercise their operational contractual agreements as liner consortia. In addition, it was suggested by port users that governments in the region look towards establishing the framework for standard Single Window systems at ports for the sharing of non-commercial sensitive data. Their role would be limited to this framework setting to then allow industry stakeholders themselves to set up electronic data interchanges to improve operational visibility and fluidity of cargo. It was reaffirmed that the data from the previous and next ports of call for ship were vital for landside port community stakeholders to be able to plan their activities in an efficient and timely manner. It was also commented that nautical parties such as towage, pilotage, chandlers and other important players in the overall coordination of a port call would need to actively engage and share data as part of a wider port community system and should not be excluded.

In a fascinating anecdote on digitalization and automation, one panellist noted that the reason behind the highest global levels of productivity at their country's ports as measured by the World Bank CPPI productivity index was mainly attributable to the highly skilled docker workforce who use traditional materials handling equipment as opposed to fully automating the small to medium sized terminals where they are employed with decent labour conditions. One example was cited of a semi-automated terminal in that country with the prospects of additional, remotely controlled semi-automated terminals being developed in the future.

In terms of merged versus individually competing ports, the example was cited of considering the privatisation in the UK of the main ports through concessions to private terminal operators using the example of new neighbouring ports in the South of England in the UK (the established Hutchisons terminal concession in Felixstowe being joined by the new DP World Gateway facility in London) and being left to the market to battle for cargo shares. Similarly the case was cited of public BAA airports having to divest of Gatwick and Stansted airports to encourage competition as an alternative to the merging of ports and airports in the East Asian country in question.

On the issue of carbon emissions from ships, a panellist described the “triangle” of governance, data sharing and decarbonisation in which public entities would have to cooperate internationally to avoid fragmented regional or national policies, and shipping lines would need to cooperate with shipbuilders, ports and terminals, municipal and provincial authorities, energy suppliers and research institutes and environmentally-minded finance banks to establish future bunkering terminal facilities. One panellist suggested a fund created by a UN entity to invest in research and development subsidised by the market and governments akin to the proposals currently being put on the table at the IMO for market-based measures which has as one of its aims to fund research into the fuels of the future.

East Asia: shipping decarbonization

Voluntary port-based programs for green vessels

Local and national initiative for green transition



LNG bunkering of CMA CGM Symi (15 264 TEU) at Yangshan (March 2022) – picture CMA CGM

Some voluntary initiatives to onboard future fuels are already underway in the region with the example of LNG bunkering cited at Yangshan. Panellists from all three sessions commented that several initiatives were underway in order to plan for the provision of such fuels, with some countries in the region facing the challenge of having to ship the fuel in from source locations give their absence of raw material resource.

As a final point the potential of reduced tariffs and trade barriers was discussed with the emergence of the Regional Comprehensive Economic Partnership (RCEP) agreement to enter into force on 1 January 2022 which is a free trade agreement among the Asia-Pacific nations of Australia, Brunei, Cambodia, China, Indonesia, Japan, South Korea, Laos, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Vietnam. This presents good opportunities for ports in the countries in East Asia to expand their activities with a focus on regional trade lanes.

SECTION 3 – NEXT STEPS

These identified gaps and potential solutions will now be discussed at the IAPH World Ports Conference in Vancouver between 16-18 May both in plenary sessions and at the IAPH Regional Meetings which will have this Executive Summary to set the agenda on how to put together a plan to #CloseTheGaps in port infrastructure.