Dr. Asaf Ashar, Research Professor at the National Ports & Waterways Institute, University of New Orleans, explains his vision of future trends in the West Coast South America shipping system

The inevitability of change

Dr. Asaf Ashar believes in the inevitability of future changes to service patterns of trades between Asia and West Coast South America ports – most likely involving a combination of three major changes. Although one of these changes is likely to be on the demand side, the supply side – where two changes are likely – is considered to be more important.

The main trend on the supply side is the flood of new terminal and upgrade projects currently under way on the region's West Coast, including developments at Manta, Guayaquil, new Guayaquil, Buenaventura and Callao. When completed, these ports – which previously were under-equipped and unable to handle modern, gearless vessels – will have deep water, be fully equipped with gantry cranes and will be able to handle much larger vessels. Another major change is the expansion of the Panama Canal: not only will the Canal be able to handle vessels of 12,500 teu, but its capacity will double, allowing more shipping services.

Dr Asaf Ashar of the National Ports & Waterways Institute, University of New Orleans

Why should these changes affect shipping lines' service patterns to the region? Ashar explains that today the region is served by two dominant service patterns. About half the services follow the so-called L-shape pattern, which combines Asian and inter-America trades. These are direct services from Asia with very long rotations, usually involving Mexican, US West Coast (USWC) and South American West Coast (SAWC) ports. The other service pattern is indirect; it involves a combination of all-water trans-Pacific services and feeder services from transhipment hubs in the Panama Canal.

Ashar claims that shipping lines' service patterns are not adequately considered by port planners, with the result that many regional port feasibility studies have a "gap in their methodology". In other words, economists analyse trade volumes and teu throughput volumes and then look at ports' requirements, ignoring the fact that between these two indicators there are service patterns. Ashar theorises that these patterns, or more precisely the changes in them, are the key to determining port requirements, including throughput, types of ship, characteristics of terminals, etc.

Looking at the future of SAWC ports, Ashar believes it is necessary to examine the two service patterns mentioned above

in more detail. The feeder/transhipment pattern should, in theory, be supported by the expansion of the Panama Canal, owing to the expected increase in the number of services through it, with shippers employing larger vessels and benefiting from reduced costs.

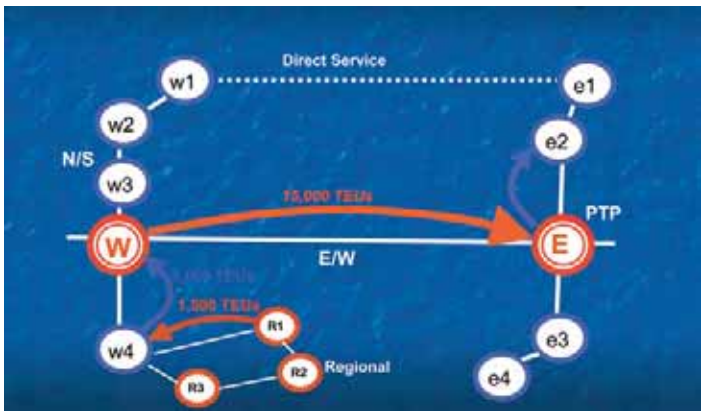
On the other hand, new and improved ports on the South American West Coast will provide support for improved direct services; this will include 'de-coupling' the current L-shape pattern and introducing 'pure', direct Asian-to-SAWC services by Panamax and perhaps even post-Panamax ships. Thus the question has to be whether the future favours more transhipment or more direct services.

Ashar believes that this is an important question, because with mainly transhipment services there is a requirement for SAWC ports to equip themselves to handle smaller ships, compared with the larger ships on the direct services. And then there is the related structural issue of the shipping lines: today, most of the single-owner lines, such as Maersk and Evergreen, follow the transhipment model, whereas joint services follow the direct model. Hence, more consolidation in the shipping market may lead to a preference for the transhipment pattern in SAWC and worldwide (see below).

Which of the two service patterns is likely to prevail? Ashar indicates that his extensive statistical analyses of the region's existing services clearly demonstrate that currently, in transit time terms, direct L-shape services

Future direct Asia/SAWC service pattern

Future direct Asia/SAWC service pattern with regional feedering



Fourth revolution: global grid

Fourth revolution: regional grid

are still the best option.

But will this always be the case? His feeling is that in the short to near term, following the completion of the new port projects, the new, 'pure' direct services will have the upper hand (see graphics), at the expense of transhipment. In just one example, the best L-shape direct service currently has a transit time of around 25 days. This could be cut to around 17 days by 'pure' direct services, whereas transhipment would still take around 30 days.

In the long term, there is another possibility. Instead of just operating feeder services to/from the Canal hubs, a new transhipment-based service pattern could be established, taking advantage of what Ashar calls the north/south diagonal. For example, there is a large trade between the US East Coast (USEC) and SAWC, which passes through the Canal. The diagonal services that serve this trade, on their way down from the Canal to SAWC, could feeder the Asian traffic. This type of 'intersection' transhipment is common with airlines.

A shipping line that has both east/west and north/south services could combine the two to give the same advantage as direct services – and perhaps even more. Why? Because instead of having just a single direct weekly service from Asia to SAWC, this combination could result in two or maybe three weekly services between Asia and SAWC, and also offer a much wider selection of ports in Asia.

It might be argued that the transhipment model could evolve at a later date into what Ashar defines as the "fourth revolution" of container

shipping, in which there will be a new worldwide service pattern. Eventually, the whole east/west trade will be so large that there will be vessels that only operate between what he calls Pure Transhipment Ports (PTPs), or ports that only handle transhipment traffic and do not handle local.

Essentially, the fourth revolution will include a worldwide restructuring of service patterns, with only a few very large vessels calling at (say) only eight mega-container PTPs dedicated to providing transhipment services. This service pattern might handle around 50% of the east/west and north/south trades. The integration of east/west and north/south services would create what Ashar calls the "global grid".

This grid would mean a new worldwide shipping system which would focus on multi-transhipment. The establishment of the fourth revolution is conditional on the development of a new port technology for the PTPs, since they will be required to handle large volumes of transhipment traffic in a very cost-effective and efficient way.

In time, if the ports industry can find the technology to do this – and here Ashar is talking of around 500 moves per berth hour and US$20–US$30 for a one-way transhipment move – it might somehow provide the basis for the emergence of what could be described as a cross-Panama, bi-directional (counter-rotating) hub-to-hub service with big, fast ships, following an equatorial round-the-world route: what he calls the "beltway" or "ring road of the world".

This is probably the ultimate development. However, the change in service patterns seems to be stalled at the present time i.e. the services employing newer and larger ships that have been replacing older and smaller vessels on the primary east/west trades have largely followed previous service patterns. Although Ashar doubts whether big changes will come before about 2020, he still believes that some changes in service patterns may well come earlier. In particular, he suggests that some elements of the global grid will be triggered by the expansion of the Panama Canal, which should be completed in 2014–15.

In summary, Ashar believes that the global grid will evolve and will be geared toward lines with both east/west and north/south services. This grid will provide customers with an unprecedented level of connectivity derived from the option for multiple transhipments. As for the SAWC, Ashar believes that in the near term we will continue to have a mixture of direct and transhipment services, with direct services gaining the upper hand. ■

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