

# LongRead

## Headwinds prevailing



**With or without the trade tensions, a slowdown in the global economy is blowing headwinds into container shipping once again. The WTO recently warned its world merchandise trade indicator had slumped to new lows**

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After months in abeyance, the US-China trade war is back on. US tariffs are now expected to be increased to cover the full \$500bn worth of Chinese imports. Of course, with Washington's trade policy changing by the tweet, the only certainty at this stage is the investment and supply chain uncertainty brought on by political flip-flopping.

It's a similar story in Europe, where the UK's Brexit debacle rolls on, with apparently no resolution in sight. Once again, the only options for shippers and logistics providers are to wait and see, or take potentially expensive risks to start shifting supply chains.

The WTO recently warned that its world merchandise trade indicator had

slumped to new lows, while data from Container Trade Statistics (CTS) for January and February showed widespread weakness: with imports to Oceania, Indian Subcontinent, and South America down 9.2%, 7.3% and 6.3% respectively.

On the other hand, CTS data for March shows European volumes holding firm with a 7% uptick in first-quarter imports from Asia. This was reflected at the port of Rotterdam, where first-quarter throughput was up 7.3%, while Antwerp reported the strongest March on record.

The major European forwarders had a buoyant start to the year, too. DSV

increased its first-quarter sea freight by 4% to 360,000 teu, Kuehne + Nagel's volumes grew 6.2% to 1.14m teu, while CMA CGM-owned Ceva Logistics also increased 6.2% to 193,000 teu.

Against this topsy-turvy trade backdrop is the myriad challenges that start with the shipping lines' search for often elusive profitability and work their way down through the container supply chain to ports, feeder operators, hauliers, freight forwarders and cargo owners. Increased transit times, reduced port coverage and poor schedule reliability have led to some shippers complaining the industry is "going backwards".

Carriers face an uphill task in convincing shippers to pay more for sea freight, especially when considering the estimated \$12bn a year added fuel costs from the IMO 2020 sulphur fuel cap.

All these factors are adding to trade and investment uncertainty, while advances in digital logistics technology are providing opportunities for industry entrants and incumbents alike. Meanwhile, trade regionalisation could upend shipping networks and the fundamental nature of container logistics even further.

### An uncertain time

At the turn of the year, Neil Davidson, senior analyst for ports and terminals with Drewry, predicted global container port growth will fall from an estimated 4.7% in 2018 to 4% this year. Although, he cautioned, the projection is highly uncertain due to the trade war and Brexit. In which case, does the growth outlook still hold firm?

"It's still about what we're expecting," he tells *The Loadstar*. "Last year was skewed a bit by the tariff war worries, and the frontloading of volumes into the US in particular. So growth will have to slow down a bit this year because inventory levels are so high in the US.

"But it's a broader story than that because the world economy is maturing and slowing, and the era of globalisation has run its course. We're seeing a very significant change to more regionalisation, which is going to affect volumes on the long-haul routes but also provide opportunities on shorter, intra-region ones too."

Container port growth was largely driven by throughput in China over the past 10 years, notes Davidson, but as



the Chinese economy matures, so too has its port volumes, leaving the rising "ASEAN tigers" to pick up the slack. He says the biggest port opportunities now lie in Vietnam, Indonesia and Malaysia.

"This is where the intra-region growth side of the story plays in – it's not just growing volumes for inter-continental, but ASEAN is playing a bigger part in the regionalisation and the huge intra-Asia trade," he explains.

That doesn't discount China's role in shaping regional and world trade, of course. With 31m teu and 100 port pairs, intra-Asia accounts for roughly one-in-four boxes shipped worldwide every year. And much of the growth in South-east Asia is driven by trade with China and, to a lesser extent, Korea and Japan, with the ASEAN-Far East trade showing "remarkable growth", according to Drewry.

China's influence is also spreading across central Asia and into Europe, in the form of the Belt & Road Initiative (BRI), but also via the more tangible developments on China-Europe rail flows. Investment in Eurasian rail infrastructure has spurred rapid growth, with volumes doubling to 1.1m teu in 2018, according to Chinese authorities, and estimates suggest this could reach 2m teu by 2020.

However, Davidson points out, long-distance rail is very small in terms of capacity and highly subsidised, making it very much "on the fringe."

In addition to rail developments, China's BRI ambitions include a growing interest in European port

ownership. In March, Italy became the first G7 nation to sign up to the BRI, paving the way for Chinese investment in four Italian ports, according to local media.

This would bolster China's efforts already under way in Greece, where state-owned Cosco's takeover of the port of Piraeus led to record-breaking throughput of 4.4m teu in 2018, up 19.4%. Meanwhile, Cosco also has ambitions to turn the Belgian port of Zeebrugge into its major North European hub, according to Alphaliner, following its acquisition of the CSP Zeebrugge terminal and a new concession agreement concluded last year.

"The investment may bring a lot of volumes like we've seen at Piraeus, but it's transshipment volumes and in control of the carrier," notes Davidson.

Gateway traffic is much harder to shift since it is so heavily reliant on inland transport, and it's here that rail is playing a bigger role, he says.

"Rail is much more important for the high-volume gateway flows from major ports like Antwerp, Rotterdam and Hamburg, where it's really playing a vital role on the land side to distribute big volumes. This is likely to increase due to environmental factors – another big issue for the industry."

For example, he says, barge operators and intra-region feeder lines are likely to expand services, as environmental concerns from shippers push logistics providers into offering alternatives to road freight.

"That's also what's quite interesting

about DP World buying Unifeeder and wanting to become a trade enabler that's much more involved in the whole supply chain, and not just a terminal operator," he adds.

Another factor driving shortsea shipping is the increased transshipment and fewer mainline port calls resulting from ultra large container vessels (ULCVs) plying the deepsea trades.

In fact, lurking behind a number of industry challenges is the determination by carriers to deploy ULCVs. Take, for example, schedule reliability, currently a hot topic in shipper circles and the proverbial stick regularly used to beat liner executives.

According to analysis from SealIntelligence Consulting, carrier schedule reliability fell to record low levels last year.

At the TOC Asia conference in April, Ocean Network Express (ONE) chief executive Jeremy Nixon sought to partially blame the weather for the industry's poor performance. He highlighted how the increased number of typhoons in Asia is playing havoc with port and shipping operations, as the storms rip through key shipping lanes and force the closure of major ports in China, Korea and Japan. The port of Shanghai, he said, was closed for 28 days between April and August 2018, creating widespread disruption to carrier schedules and subsequent port calls.

However, SealIntelligence chief executive Lars Jensen explains carriers' schedule reliability problems from a different perspective.

"The deterioration is not something that's occurred suddenly. It seems to have been a long slide which to me points to a number of factors," explains Jensen.

### Blame the weather

He claims weather events and other supply chain disruptions such as port strikes fail to account for the poor performance because if this was the case the data would show more up-and-down "spikes", rather than a continuous downward trend.

"This indicates an element of – I wouldn't say deliberate carrier decisions – but I would say carriers have made decisions that lead in this direction.

"If you then start to look at what those decisions are, then an obvious tactical decision, when carriers are



*Neil Davidson, senior analyst for ports and terminals with Drewry*

trying to become profitable, is that if you're behind schedule, will you necessarily spend the money to go faster? And the answer to that is quite often no, because at the end of the day who is going to pay the added fuel bill?" asks Jensen.

The challenge carriers have, he continues, is that many shippers are reluctant to pay for reliability, and even those who do will only wish to pay extra for their time-sensitive cargo, which is often a small percentage overall.

"When you have a ship of 20,000 teu to fill, it doesn't help that shippers of 500 of those boxes want to pay extra. That's not really going to move the needle and it becomes harder to justify spending the money doing it."

Another consequence of ULCVs is the reduction in service frequency. Jensen believes fewer services on the transpacific and Asia-Europe trades means the impact from any disruption is magnified.

"If you have an incident somewhere – a crane that breaks down, a port strike, poor weather – and one service is impacted out of 50, that doesn't really matter all that much, but if it's one



*SealIntelligence chief executive Lars Jensen*

service out of 25, suddenly the relative impact becomes larger."

It's this domino effect of port disruption that carrier ONE, together with THE Alliance partners Hapag-Lloyd and Yang Ming, is seeking to avoid by rejigging port calls. ONE's Nixon says the group plans to build in more "buffer time" by reducing the number of port calls in China on a single loop, since vessels calling at both Shanghai and Ningbo end up queuing for a berth twice when operations at the two major neighbouring ports are disrupted.

For Jensen, this strategy indicates a possible battleground between the three alliances and provides the potential for one to break ranks to try to gain an edge, as they carefully plan their increasingly commoditised networks to balance cost efficiency with operational reliability.

For example, he says, liner shipping networks are more cost-efficient when using large hub ports, but because these tend to also be more vulnerable to disruption, there may be a case for creating a superficially less-efficient network which uses more hubs and is thus more resilient to disruption.

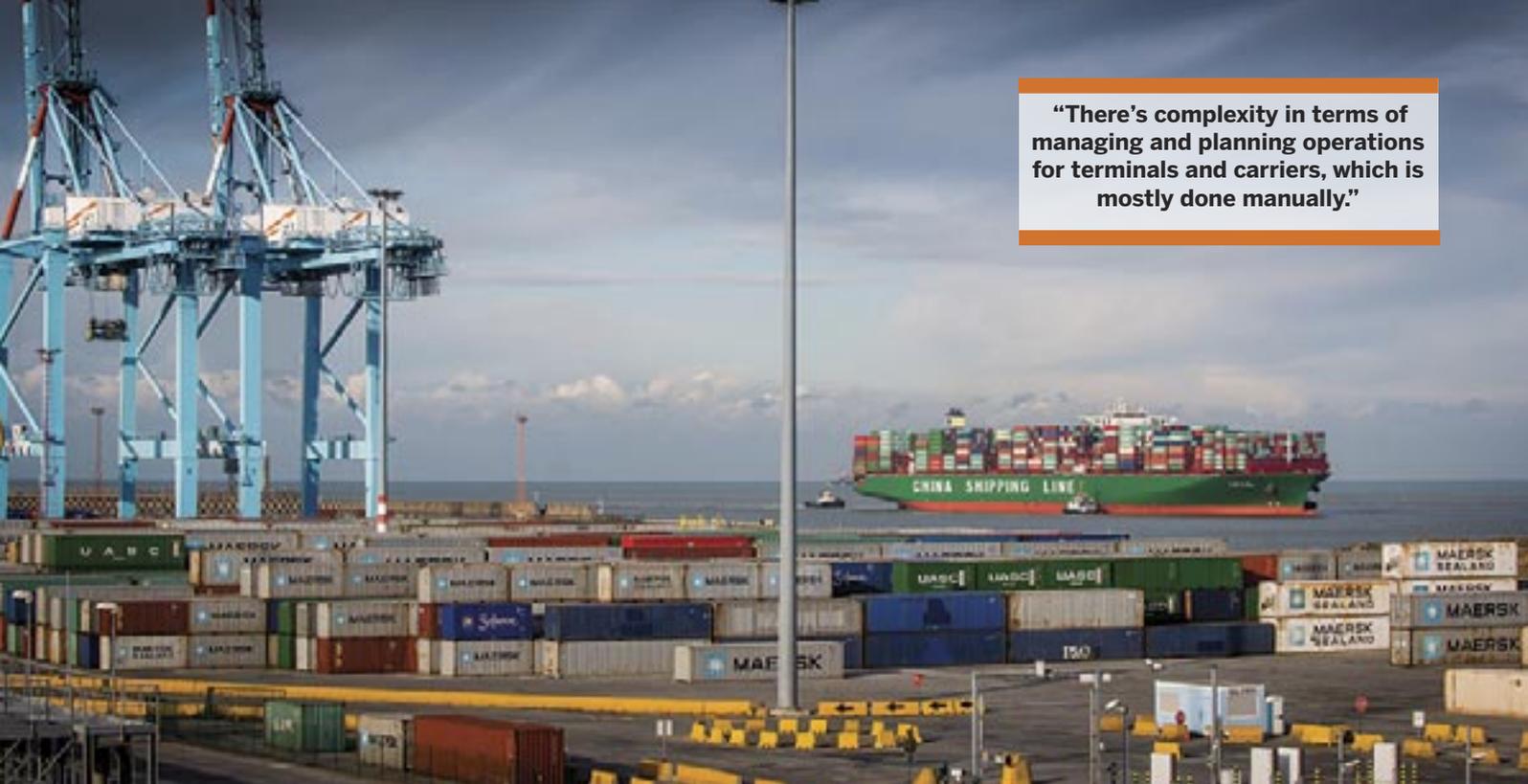
"It's a trade-off and a strategic carrier decision: do you want the lowest cost network to be competitive on price, or do you want a more resilient network? Because, once again, it comes down to what shippers are willing to pay for."

### Communication

A long-standing area of focus for improved schedule reliability has been to enhance carrier-terminal relations, namely via operational communication and port call efficiency.

In fact, vessel tracking specialist MarineTraffic believes the lack of communication between vessels and terminals, which tend to only coordinate activities at the last minute, is costing the industry billions in wasted fuel due to the time vessels spend waiting for a berth. Containerships spend 4.6% of their time anchored due to early arrival, which is about 15 days a year, according to MarineTraffic. As a result, the industry wastes \$18bn a year on "rush-to-wait" fuel inefficiency, according to NAPA Fleet Intelligence.

MarineTraffic is working alongside the IMO with ports and carriers to implement a "just-in-time" sailing concept, allowing vessels to slow their speed where necessary and avoid



**“There’s complexity in terms of managing and planning operations for terminals and carriers, which is mostly done manually.”**

waiting at berth. To do so, the group has identified the need for global standardisation and harmonisation of data to provide ships with regular updates on berth availability.

Drewry’s Davidson says any progress in this area will require a change in mindset.

“For too long the relationship between carriers and terminals has been an adversarial one. The carriers have put a lot of pressure on terminals and dictated to them they’re coming with much bigger ships, but at the same time they want to pay less for the service.”

In response, he says terminals have “held their ground” and been “very stolid” in stating “we are what we are, we’ll do our best, but that’s it”.

At Rotterdam, digital developments could pave the way for better communications in port operations. In April, the port authority said it had successfully launched Pronto, a digital operations platform aimed at reducing expensive quayside and ship downtime. Piloted at Rotterdam’s ECT Delta Terminal, Pronto provides a standard operational communications system that shares data in real time among stakeholders.

The benefit, according to customer Bob den Ouden, special products manager at MSC, is avoiding the miscommunication with phone calls and emails which cause delays to ship operations and create additional costs.

Not all stakeholders are convinced,

however. Port of Rotterdam’s head of containers, Hans Nagtegaal, told *The Loadstar* last year that while data sharing was essential, it was “easier said than done”, with various terminal operators wanting to “keep their cards close to their chest”, as various data-sets, such as barge planning, can be used in unintended ways, including measuring terminal performance.

Approaching carrier-terminal operations from a different perspective is Thor Thorup, chief commercial officer and co-founder of Portchain.

### **Huge opportunity**

“We saw huge opportunity within the industry,” he says. “There’s complexity in terms of managing and planning operations for terminals and carriers, which is mostly done manually.”

Part of the problem with deteriorating schedule reliability, Thorup claims, is the greater throughput large vessels bring with each service, which increases complexity further and makes it “harder to keep up”.

He adds: “Increased vessel-sharing agreements [VSAs] through the alliances are definitely not making operations easier for either terminals or carriers. One practical implication we see is that information can sometimes be shared later in the process.”

Portchain helps carriers and terminals optimise operations by using machine learning, analytics and AI.

“We do so in a way that’s intuitive to use, because you don’t need training to use the tool – it’s like using an app on your smartphone,” explains Thorup.

For example, he says, Portchain’s optimisation algorithms maximise asset utilisation and reduce costs. For terminals, this means better berth utilisation to increase capacity.

“Berth planning and quay planning is normally done manually, either with spreadsheets or with different interfaces which can be part of the terminal operating system.

“Typically, these are more visual tools where you’re moving boxes around – there might be some integration in terms of data, but it’s not really helping you make decisions.”

On the other hand, Portchain’s support tool helps planners make better decisions, notes Thorup, as it provides automated options for berth utilisation. Terminals can often increase capacity by 10% or more just by having better planning, he claims.

Another benefit is planning speed, especially when accounting for last-minute changes from schedule disruptions. Instead of spending an hour to make a plan, Thorup explains, the algorithms can generate a plan for an entire week in seconds.

“So that really helps a lot in making more rapid contingency planning, and also, imagine a carrier calls a terminal and asks to make a change or add an additional call in the same week - the terminal can find an answer that much

quicker and also improve customer service.”

On the carrier side, Portchain allows vessel operators to increase their “planning horizon” by visualising and predicting issues in the schedule using machine learning. As a result, carriers have the opportunity to reduce speed or make decisions, such as rotation changes, which would otherwise be quite costly if made closer to arrival, Thorup says.

“This helps carriers reduce bunker fuel costs, but also improves schedule reliability, because if you are two days out and suddenly you try to make changes to your port calls, it’s often really expensive. But if you’re further out, you have a lot more lead time to make that decision and take corrective action before it’s crunch time.”

While Thorup is keen to stress the standalone value in Portchain, because individual terminals and shipping lines can use the product without the need for collaboration, he says the technology allows for improved communication.

He says both carriers and terminals are approaching the tech company for this purpose, and that there will be an even greater mindset shift on collaboration once the benefits of enhanced cooperation and communication become clearer. Portchain is working on some “big examples” with major carriers and terminals to make that a reality, he adds.

Muddying the water further in the carrier-terminal relations equation is the ambition by players on either side to supply more logistics services. DP World’s acquisition of Unifeeder, highlighted by Drewry’s Davidson, is just one example.

“A lot of them have been doing it for years anyway,” Davidson points out, highlighting how terminal operators HHLA and Eurogate use intermodal as prime examples.

“But I think the DP World example in particular is exceptional because they want to go much further into feeder shipping. P&O Ferries has been brought under DPW now as well and they’re looking at logistics management in a wider sense.”

### **Kings of the game**

Also looking to get closer to the end-customer are a handful of shipping lines, most notably Maersk, CMA CGM and Cosco. However, Davidson says, the players best equipped to provide



*Maersk is among the handful of major shipping lines with ambitions to get closer to the end customer*

logistics services are a “marvellous group called freight forwarders”.

“They are the kings of this game because that’s what they do and they’re very good at it. So this is the challenge because carriers and terminal operators have to try and become as good as those like Kuehne + Nagel.”

For Davidson, it will be hardest for the shipping lines to be successful, due to the inherent conflict of interest in providing shipping services, compared to forwarders which can play the whole market without pressurising customers to use a certain carrier.

SeaIntelligence’s Jensen notes that it’s “imminently logical” for carriers to want to control more of the value chain when they see other parties with much higher margins.

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**“The players best equipped to provide logistics services are a “marvellous group called freight forwarders”**

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“The problem is not that the strategy is wrong, but you have to ask the question, why hasn’t it worked before? And is there anything different that leads you to believe a different outcome will ensue this time around?”

The answer, according to Jensen, is “no”. First of all, he shares Davidson’s view that it will be difficult to compete with freight forwarders when they can’t leverage multiple carriers on behalf of shippers. Secondly, he notes that to overcome the on-the-ground difficulties arising from inland logistics, such as with the intricacies of trucking, they need to build up a local footprint.

“But I’m not really seeing the carriers move down that path. I’m seeing a move more or less akin to previous efforts where carriers want to manage this based on their existing set up, and I’m not necessarily sure that will be successful.”

### **A repeating cycle**

Jensen says the whole scenario is a repeating cycle, whereby carriers start losing money and look to get into logistics. They then continue to build up some services, only to have new management years later diagnose the company’s financial struggles as not focusing on core services.

“That’s not to say going end-to-end and being an integrator is wrong, or being only an ocean carrier is wrong, but carriers have a hard time finding the right balance between the two.”

Some commentators have pointed to the digital revolution unfolding in container shipping as a potential reason for carriers to be more successful this time around. Jensen is unconvinced, however, noting that while the new digital tools may give more options, they’re also available to existing logistics providers.

For example, he expects to see a fierce market when it comes to competing for smaller shippers that want to book freight online, as this provides an opportunity for carriers to get back into direct contact with those customers – a contact in the past they happily ceded to freight forwarders due to the added operational complexity.

“But with the advent of online freight, suddenly there’s an opening to serve

these small customers efficiently. And that's what the carriers want to jump into, but again the tech is not unique to them and forwarders are also doing it."

Looking ahead to how container shipping digitisation will play out, Jensen says the industry's complexity and competing needs will preclude any common end-to-end solution from emerging. Instead, there will be many digital tools, each addressing different parts of the supply chain.

"In order for this to be efficient, the absolute key is that all these tools can talk together easily," he adds, noting this is why the newly formed Digital Container Shipping Association (DCSA) is so important.

"It's not just promising but essential, because interoperability is the key word – but underlining that is standards."

However, while Jensen believes determining the standards is achievable, implementing them will be much harder.

"These companies will have to go back into their own organisations and change their systems to conform to the new standards. That's the hard part because it's going to take time and money."

### Any fuel knows

Changing those systems might be a long-term cost for carriers, but a more pressing short-term cost is the rising fuel bills from IMO 2020.

Jensen says there's no question carriers will pass on the costs, considering the estimated \$12bn annual fuel bill is more than the lines have accumulatively made over the past eight years. Rather, it's a matter of when and how.

"Either the carriers will be successful in pushing through bunker fuel surcharges, or they will become fantastically loss-making, which will force them to immediately idle a large amount of capacity. That will disrupt all the supply chains and base freight rates will go up," Jensen predicts.

He says most shippers agree in principle that the increased costs need to be passed on, but there is debate over how the bill should be distributed, taking into account "headhaul versus backhaul, 20s and 40s, reefers and dries, and so on".

Jean-Paul Rodrigue, a professor at the department of global studies and geography at New York's Hofstra

University, says one unknown consequence of the 0.5% sulphur cap will be the supply and demand effect on bunker fuel cost.

"If the demand drops for higher-sulphur fuel, then its price will drop while the price of low-sulphur bunker skyrockets," Rodrigue notes. "This could mess up the economics of shipping by making low-sulphur fuel much more expensive than anticipated."

From a ports and terminals perspective, Drewry's Davidson says there will be little direct impact from IMO 2020 unless it leads to even-slower steaming as a cost-cutting measure, which in turn results in dropped port calls and increased feederage.

**"Instead of a virtuous circle, economies of scale have become a vicious cycle where shipping lines are scaling themselves up to low profitability, limited port options and unreliable services"**

This has been the general trend from the continuous ship upsizing and mega-alliances, he adds, leaving terminal operators with difficult investment decisions. Terminal automation is a popular trend for improving operations, although Davidson reckons there's a "big myth" around automation speeding up box handling.

"The reality is that at most automated terminals you end up with slower ship handling – the fastest way to handle a ship is with a manual operation. The benefits of automation are efficiency in the yard, lower emissions and improved safety."

One development which might signal a future trend in terminal and port operations is currently getting under way in South China, via the Hong Kong Seaport Joint Operating Alliance Agreement. Much like their carrier customers, competing terminal operators in Hong Kong are joining forces to coordinate operations across the whole port.

Davidson explains: "Terminals are finding difficulty in accommodating the bigger ships and alliances. The customer has grown to a size where quite often it's too big to use a single terminal at many ports. So you have volumes split over terminals, and inter-terminal transfers increase complexity.

"The ideal solution in those ports is to merge the terminals both in ownership and physically. But of course that's challenging commercially, and it's very expensive to do physically. So the idea of running them together as a virtual terminal in an alliance is quite attractive."

Hong Kong will be an interesting test case, he adds, since it's such a large port and operations will be run under a unified terminal operating system.

"It's a very significant and real step to bring the terminals together operationally, so it's going to be very interesting to see how it pans out."

In the meantime, the debate continues over whether the search for economies of scale in container shipping will continue. For Rodrigue, the idea has run its course.

"Economies of scale can still be technically implemented, but from an operational and economic standpoint they appear not to convey any benefits," he says.

"Instead of a virtuous circle, economies of scale have become a vicious cycle where shipping lines are scaling themselves up to low profitability, limited port options and unreliable services. The ideal ship size has been subject to debate for a while, but it seems that neo-panamax ships are now right-sized for significant market coverage."

### Strategic mistake

This is a view shared by Jensen of SealIntelligence, who says going to vessels of 18,000 teu and above was a long-term strategic mistake.

"It's a step too far and leads to a balance where you have too few weekly services and too many congestion issues at ports and hinterlands. However, the reality is there's going to be about 150 of them, so of course carriers will use them."

He says if the carriers had stopped at the 14-15,000 teu range there would be more efficient networks and more frequent services with higher reliability.

"At that size these ships become very versatile, they can be used on all the deepsea trades, they can be used in the Panama Canal and, increasingly, at a lot of secondary ports.

"If the industry was entirely rational, I would say we will not see more ordering or steps towards even larger ships, but given the industry is what it is, you can't rule it out."