eBook

Unclogging the oceans, ports and global supply chain

Solutions to decongest and decarbonise today's ocean trade

WÄRTSILÄ

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Unclogging the oceans—Executive Summary

A few months ago, close to 100 container vessels were lined up outside Los Angles harbours. And this wasn't the sole incident. Since the pandemic began, floating traffic jams outside almost all major harbours have become a common sight. From Singapore, Europe to South California—all big seaports are congested worldwide. Vessels in Asia have had a waiting time of 5 to 7 days, while delays on the US West Coast have almost tripled year-on-year in 2021. A snarled-up supply chain is just one of the challenges facing shipping. There's a much bigger decarbonisation metamorphosis taking place, giving the maritime industry massive impetus to evolve, both in terms of technology and operational efficiency.

Decongest to decarbonise

- Pandemic or no pandemic, multiple studies show that container ships spend around 6 % of their time at anchor, waiting for berthing. And these delays make up around 15 % of the entire shipping's fuel consumption.
- MarineTraffic estimates, bad planning, early arrivals and the subsequent time at anchorage leads to unnecessarily burning bunker totalling USD 18 BN annually. This results in the emission of 160 MN tons of CO_2—that's the same amount of CO_2 the whole Netherlands produces in a year.
- All this because the current systems at most ports and vessels aren't always compatible, leading to information lag or a complete communication gap.
- Wärtsilä Voyage identified and addressed this break in the ecosystem early on with Wärtsilä Navi-Port, a simple middleware that enables real-time information exchange line between the ship, the shore office and the port. Once they all are in sync, you get Just-In-Time arrivals.

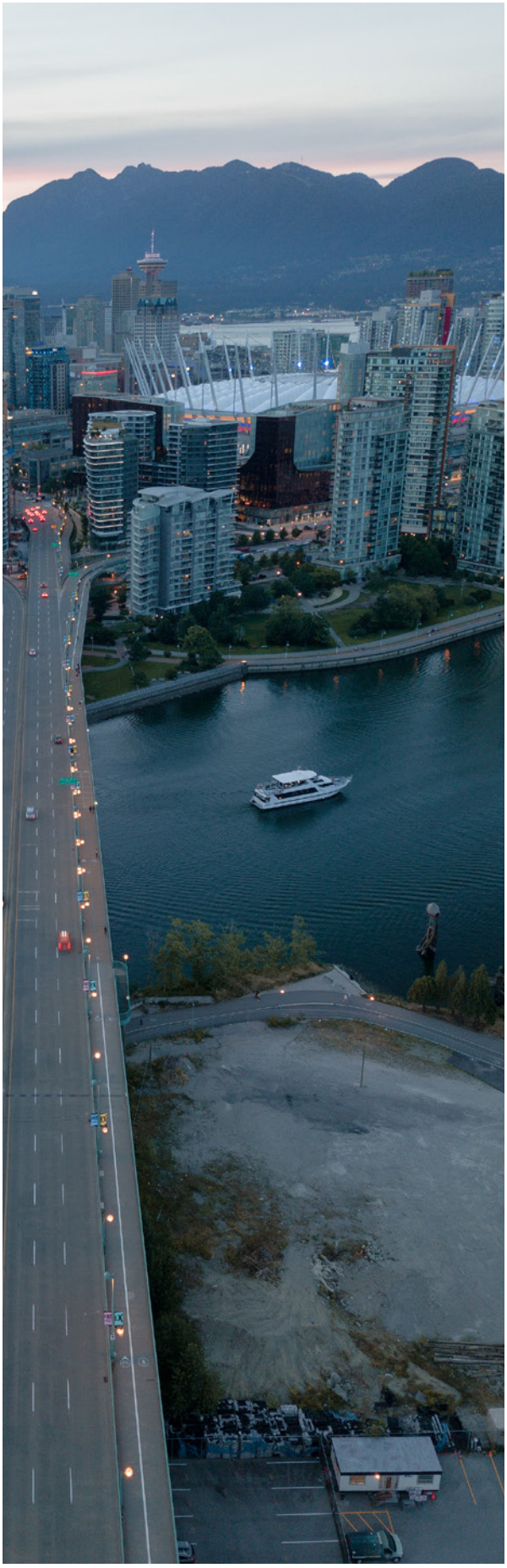
Sustainability shaping shipping's future

- Just-in-Time is just one of the ways to reduce shipping's carbon footprint. The IMO has a bunch of policy deadlines staggered up to 2050. In fact, the Carbon Intensity Indicator (CII) comes into effect as early as 2023.
- Therefore, there's a pressing need to adjust current operations. Moreover, pressure from banks, cargo owners and public opinion is influencing the speed of change.
- Fortunately, digital technologies have some solid decarbonisation tools ready that can be implemented already today.
- For instance, Wärtsilä Voyage's Fleet Operations Solution, a cloud-based solution that helps reduce fuel consumption and operational costs with a voyage and vessel optimisation.

Pragmatic path to adopt new tech

- Adapting new technologies isn't just about decarbonisation. It's also a matter of staying operationally efficient and competitive. However, this transition can't happen overnight.
- Up to 67 % of some container fleet segments (by capacity) are still in the order book, as per Clarkson. This means a lot of vessel technology decisions have already been locked to today's technology.
- Also, only 4.2 % of the global shipping fleet and 34 % of newbuilds on order can use alternative fuel or propulsion. Meaning, most vessels will have to find ways to decarbonise using an alternative solution mix such as energy-efficiency systems, digital tools, retrofits and such.
- We have, therefore, come up with a step-by-step approach to assimilate intelligent technologies. This creates immediate and quantifiable operational value, making shipping greener and safer starting today while opening the pathway to future technology ecosystems.
- Also, it's not just about ships. There are over 1.65 million seafarers serving on merchant ships alone who'd need to be trained to handle new greener technologies—a huge reskilling challenge that Wärtsilä's simulator training tech can solve in a safe and cost-effective way.

The bottom line is: The smartest way to unlock shipping's 4.0 is to focus on today while taking actions for tomorrow. And there is plenty of trailblazing technology to be excited about right now—**solutions to digitalise, decongest and decarbonise today's ocean trade and unlock the full potential of a well-oiled global logistics chain.**



01

Chock-a-block oceans; snarled-up supply chain

Introduction

AVERAGE WAITING TIME FOR VESSELS WORLD OVER

4 to 5 days in Europe

5 to 7 days in Asia

7 to 9 days in some UK ports

28 to 45 days in the US-West Coast

Sources: TradeWinds, S&P Globals

Imagine if airplanes were asked to hover and wait in the air for days because airports were too congested. Unthinkable, right?

Now imagine a ship, that carries 18,000 20-foot containers and has an engine-power of eleven Boeing 747-400 jumbo jets, is asked to wait for close to a week before being given a berth.

It's not just the Suez Canal blockage earlier this year or the latest news on some 100-something cargo ships circling outside the US West Coast. Enormous vessels carrying goods worth millions have been getting stuck for days in floating traffic jams outside almost all major harbours ever since the pandemic began last year. From Singapore, Europe to South California—all seaports are congested worldwide.

Vessels in Asia have a waiting time of 5 to 7 days, while congestion and delays on the US West Coast have almost tripled year-on-year in 2021.

And shipping containers, the modest workhorse that once galvanised globalisation, is at the centre of this storm.

Here's what happened

When the lockdowns began last year, you and I started filling our homes with office furniture and turned our living rooms into make-shift gyms. This set off a surge in orders from factories across the world.

To paint the macro picture, global online sales jumped 24 % (the highest jump in history), while the retail sector saw a whopping 48 % increase. Incidentally, 90 % of this trade is carried by sea, transported in massive metal boxes stacked on top of one another by gigantic ships across oceans.

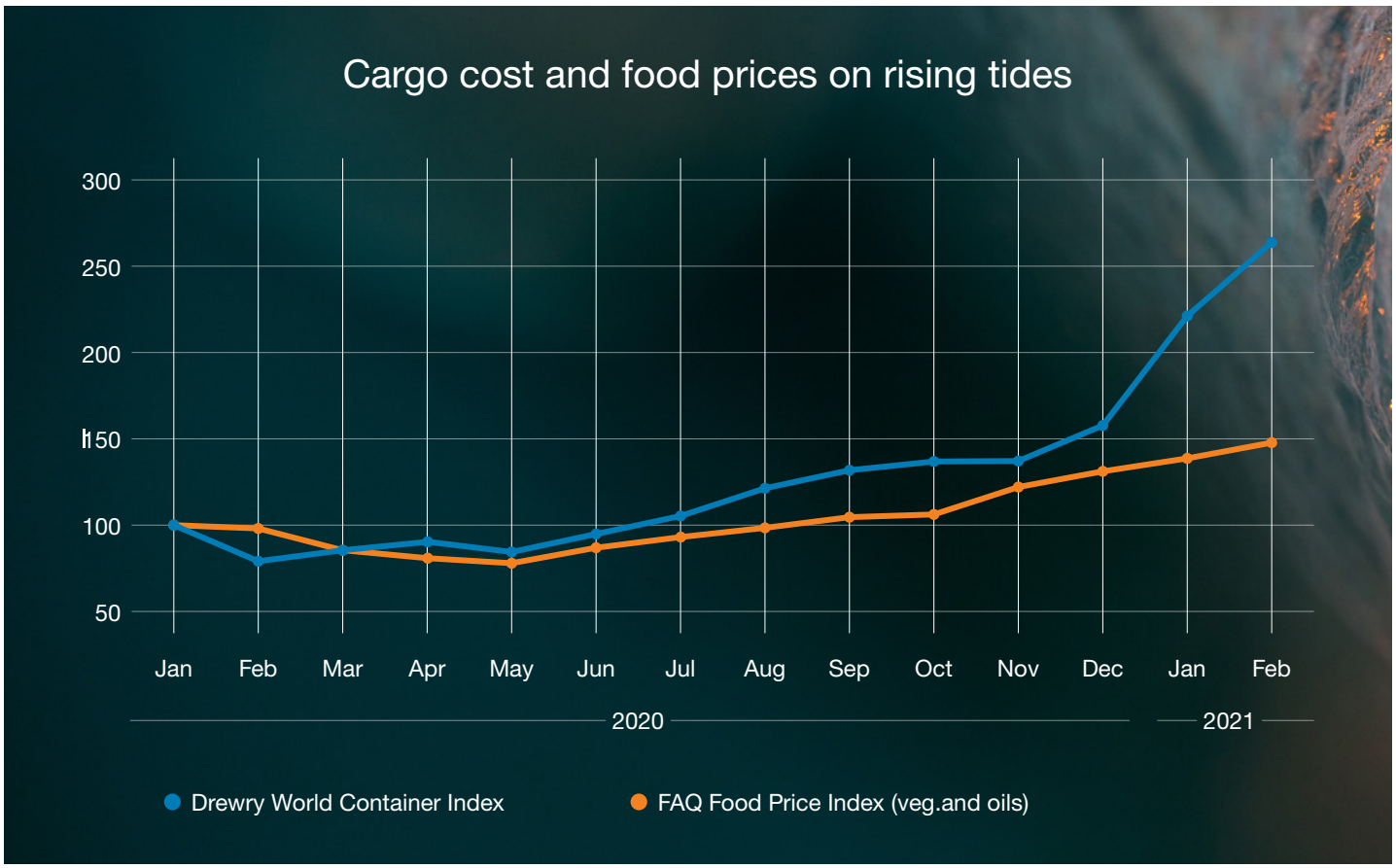
On top of that, the covid restrictions limited dockworkers and other supply chain personnel, adding to the congestion across all nodes in the global logistic chain (including inland waterways, road transport, depots and warehouses).

A double whammy!

For every container that cannot be unloaded at one port, there's a container that cannot be loaded somewhere else.

Anchorage time in ports around the world has shot up drastically, with over 30 to 40 ships waiting at a time. Larger vessels are affected the most. Ships trading 6,000 boxes or more on a port call are seeing an average 20 % increase in getting berth time. That is, more than 83 hours (3.5 days) in waiting. Delays for even smaller ships are up between 7.8 % and 9.5 %, depending on the call size.

This has caused a classic demand-supply disbalance and made freight rates skyrocket, which ultimately will trickle down and be borne by the end-user of these goods—you and me.



Delays have led freight rates to skyrocket, and its effects are now trickling down to food prices, with the FAO Food Price Index rising for nine straight months. Container costs change (100 basis points since January 2020) per 40ft container.

Sources: FAQ and Drewry WCI

Containers bound to the US and Europe from Asia are 400 % more expensive than they used to be a few months ago. At the same time, shipping lines' schedule reliability has dropped to 10-year historic lows, causing even further delays at almost every seaport worldwide.

To say that the pandemic has completely thrown off the choreography of global container movements will be the least. However, the big question is, how does such disruption happen in this day and age of hyper-connectivity and operational efficacy?

Shipping lines' schedule reliability has dropped to 10-year historic lows

Containers bound to the US and Europe from Asia are **400 % more expensive**.

Shipping lines' schedule reliability has dropped to **10-year historic lows**.

Sources: HellenicShippingNews; S&P Globals

What ship delays mean for the economy

The financial cost

And these are just the US West Coast numbers

$1 BN €834.79 MN
worth of cargo per day is handled by the US West Coast alone

$20 MN €16.7 MN
is lost every day due to delays

$70 MN
goes down the drain due to the average 3.5 days delay right now

NOTE: The above numbers don't take into account the additional losses borne by hinterland connections— trucks, trains, warehouses, etc.— due to the delays

The environmental loss

More time at anchorage mean more fuel consumption, adding to the local emision and environmental impact

$18 BN
is the total amount spent on unnecessary fuel by bunkers every year due to time spent waiting, estimates Marinetraffic

160 MN t of CO_2
per year emitted due to unnecessary waiting— that's the same amount of CO_2 the whole country of Netherlands produces in a year

Because ships and shore don't talk

About **2 million port calls** are made each year are non-linear, coordinated manually.

That is not only a mammoth task, but these delays make up around **15 % of the entire shipping's fuel consumption**.

Source: MarineTraffic

It's 2021. You'd think the industrialisation 4.0 that everyone's going gaga about would solve logistics and capacity management issues. After all, aviation has arrivals and departures nailed down to the nanoseconds. Why can't maritime follow suit?

That's because there are still a few unconnected dots on shipping's digitalisation route map.

Pandemic or no pandemic, multiple studies show that container ships spend around 6 % of their time at anchor, waiting for berthing. For a 15-to-30-day trans-pacific voyage, this translates to a minimum of 1 to 2 days at anchorage, which has currently increased to 3.5 days.

To give you a sense of what these delays mean for the economy: Ports on the US West Coast alone account for $1 BN (€834.79 MN) worth of cargo per day. The National Bureau of Economic Research estimates that delays cost ships 0.6 % to 2 % of the goods' value every day. So, every 24 hours delay causes a loss of around $20 MN (€16.7 MN). This means the present 3.5 day delays roughly equal $70 MN down the drain. And that's just the US West Coast.

Plus, it's not just the seaports. A ship at the wrong port at the wrong time has a knock-off effect on the connecting hinterland logistics, too – trucks, trains, Ro-Ro services and other inland transportation – everyone has to bear the cost. So, the losses keep accumulating along the chain.

More time at anchorage also mean more fuel consumption, adding to the local emission and environmental impact. As MarineTraffic estimates, bad planning, early arrivals and the subsequent time spent waiting in ports mean that the industry is unnecessarily burning bunker totalling $18 billion annually. This results in the emission of 160 million tons of CO_2 – that's the same amount of CO_2 the whole Netherlands produces in a year.

All this because the current systems deployed at most ports and vessels aren't always compatible, leading to a lag in information relay or complete communication gap.

Wärtsilä Voyage identified and addressed this break in the ecosystem early on—Wärtsilä Navi-Port, a simple middleware hook-up, creates a real-time direct information-exchange line between the ship's navigation systems and the port.

Once the ship and the shore are in sync, you get Just-In-Time (JIT) arrivals.

02

Bridging the communication gap

Seamless ship-to-shore connections

A connected ecosystem to receive consistently formatted uplinked updates from the ship to shore, and vice-versa, paints the latest and most complete picture for decision-making.

As soon as it becomes clear that the port will not be ready to receive a vessel at the original Estimated Time of Arrival (ETA), the Navi-Port system communicates an updated ETA to the ship's navigation system. So, rather than spending long hauls at anchorage, ships adjust to the new ETA by slowing down their speed. The difference: the extra voyage time at a reduced speed decreases fuel consumption, cuts down congestion at ports and anchorages, and lowers local emissions.

Just-In-Time arrivals simulation results at Port of Rotterdam showed a whole **23 % decrease** in fuel consumption, which also translates into a huge emission reduction.

Source: Port of Rotterdam

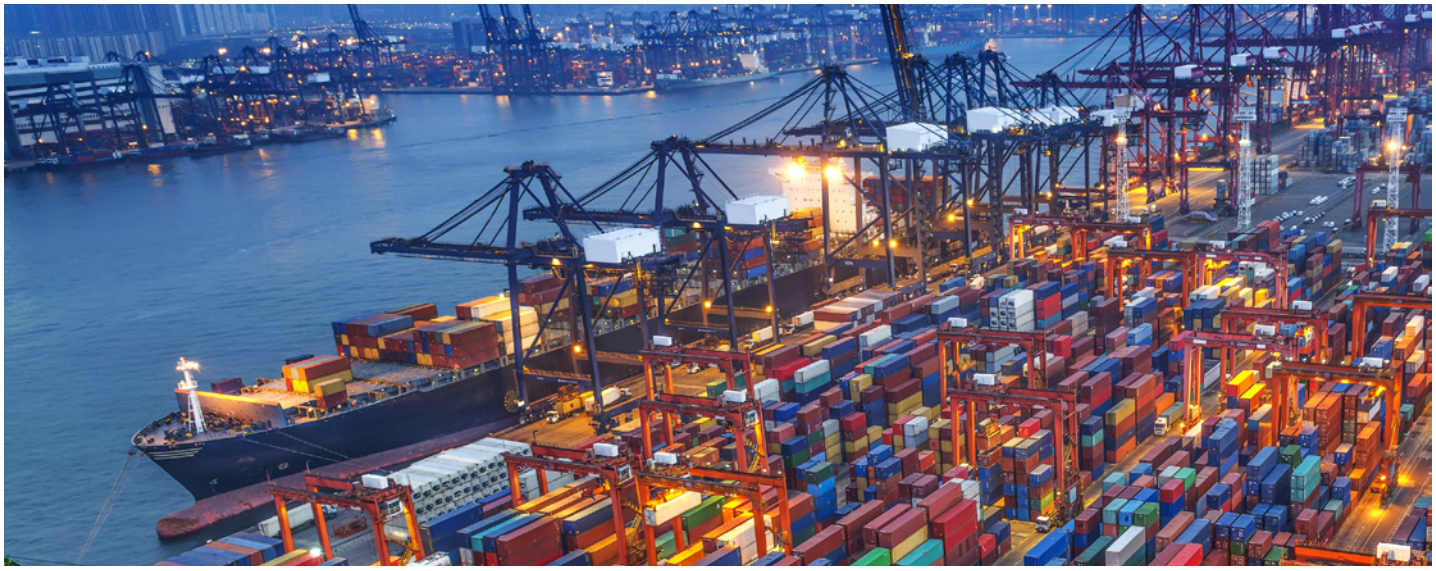
Communication works both ways

If the ship is behind schedule, Navi-Port updates the onshore systems so that the port communities can better organise their operations.

When the ships and the shore have better coordination and vessels arrive as per schedule, the whole hinterland logistics gets automatically streamlined.

Glimpses of JIT in action was already seen this year in June when Wärtsilä and Tanger-Med Port enabled the first-ever digital port call for a Hapag-Lloyd vessel. The system exchanged the required time of arrival digitally with the onboard navigation system and allowed the ship's speed schedule to be adjusted for a Just-in-Time (JIT) arrival by the clicking of one button, thereby saving fuel and costly waiting time at anchor.

With such better ship-to-shore coordination, vessels can immediately cut up to 15 % of excess fuel consumption that is currently burnt due to long anchorage, which automatically means a significant reduction in both local and on-route emissions. In fact, an IMO-led Global Industry Alliance simulation study at the Port of Rotterdam shows that Just-In-Time arrivals at Europe's largest port led to a whole 23 % decrease in fuel consumption, which also translates into a huge emission reduction.



Smarter inland connections

Congestion issues in the supply chain go beyond port calls, which Just-in-time sailing alone can't resolve. One other major bottleneck behind all this congestion is inefficient intra-port container movements.

Even if ship-and-shore are as well coordinated as the aviation industry, if the unloading and freight-forwarding channels down the stream are not efficient, eventually the container stack will again start piling up again.

> Sending a container from Shanghai to Le Havre (France) emits fewer greenhouse gases than the truck that takes the container on to Lyon.
>
> Rose Goerge, Ninety per cent of Everything

Trucks and trains are proving to be not enough

Along with personnel shortage, overland transport alone isn't able to absorb the emerging capacity needs for container movement within ports and the hinterlands. This backs up the traffic on the oceans. All major ports globally have numerous container terminals and yards spread over a large area. And the connection between them is sometimes just a single bridge, leading to massive traffic jams and congestion.

Decongesting the cargo flow

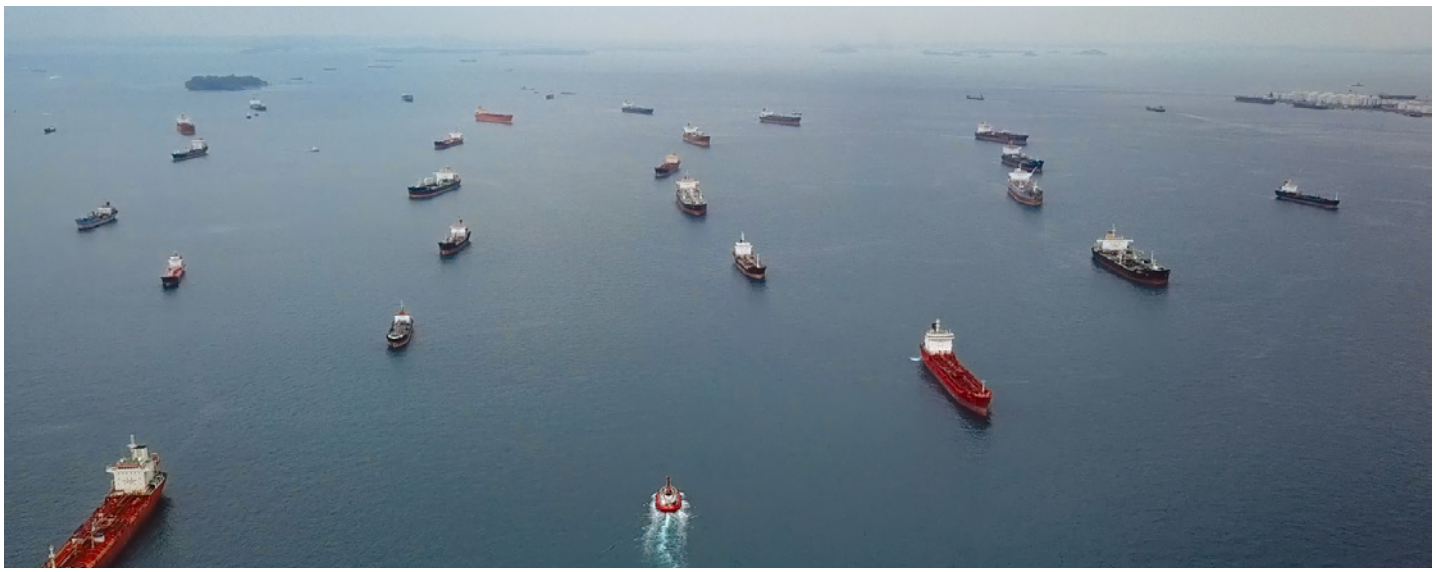
Here, autonomous, zero-emission seaborne cargo movement will be key in removing infrastructural challenges and achieving shipping's zero-emission ambition. Take, for instance, short sea shipping. Since 2015 and combined with an effort to reduce ground transportation, the EU has targeted a 25 % increase in cargo transportation by short sea shipping before 2030. This also supports the decarbonisation targets as shipping is by far the greenest among mass transportation modes when compared to the energy expends of rail, road, and air. To quote Rose Goerge's book, Ninety per cent of Everything: "Sending a container from Shanghai to Le Havre (France) emits fewer greenhouse gases than the truck that takes the container on to Lyon."

Autonomous intra-port connectivity

Some examples of such ongoing projects initiatives can already be seen at Port of Rotterdam (the busiest port in EU); Singapore Port (world's 2nd busiest); Tianjin Port, China (9th busiest in the world). These cases show how the unique pairing of next-gen sensor technology with automated navigation systems can resolve congestion issues safely even in the busiest ports and most complex inland waterways.

Why autonomous? Because it makes better ecological and economic sense.

The current inland fleet is very old (many vessels built in the 40s), fragmented, unreliable and polluting. Thus, freight forwarders completely ignore this mode. But if modernised, these new electric non-polluting vessels would cost more initially. To compensate and not get penalised on OPEX fleet operators would have to run more frequently (even 24/7) and also carry more cargo, which new ship designs will have to allow. One way to achieve both the above points is by adjusting crew size. An autonomous vessel can run round the clock and in all weather. Also, currently, the inland crew costs amount to one-third of operational costs. Considering skill shortage, this cost is only going up. Cutting crew size may help manage this cost much better.



The chicken and egg situation

Considering the above, creating a smart inland logistics network within the next few years seems the logical way forward. With solutions like SmartMove and Smart Sensors, short sea and inland shipping can be turned into a safer, cleaner, and more efficient link in the logistic chain, with greater accessibility to those who need it.

Shipping has been on a buffering mode when it comes to adopting an end-to-end seamless digital ecosystem.

One may wonder if the solution to decongest and decarbonise ports are simple digital patches and smart intra-port connectivity—what's stopping the industry from adopting it at large?

To oversimplify, it's a bit of a chicken and egg situation: ports have a greater incentive to upgrade to digital solutions if more ships have already embraced it and vice-versa. Plus, it's not always a straight line between the port and the ship. There are other parties in the equation. Like the terminal authorities in charge of berthing or other nautical services (pilots, tugs, linesmen, etc.).

The challenge, therefore, has been:

a) to orchestrate the efforts of many different stakeholders, including jumping regulatory hoops and coordinating multiple authorities at different ports, in different countries; and

b) standardisation and coordination, both in terms of technology and communication codes.

As a result, shipping has been on a buffering mode when it comes to adopting an end-to-end seamless digital ecosystem.

Impetus to evolve

Ironically, the pandemic (catalyst of this chaos) has also argued the case for digitalisation.

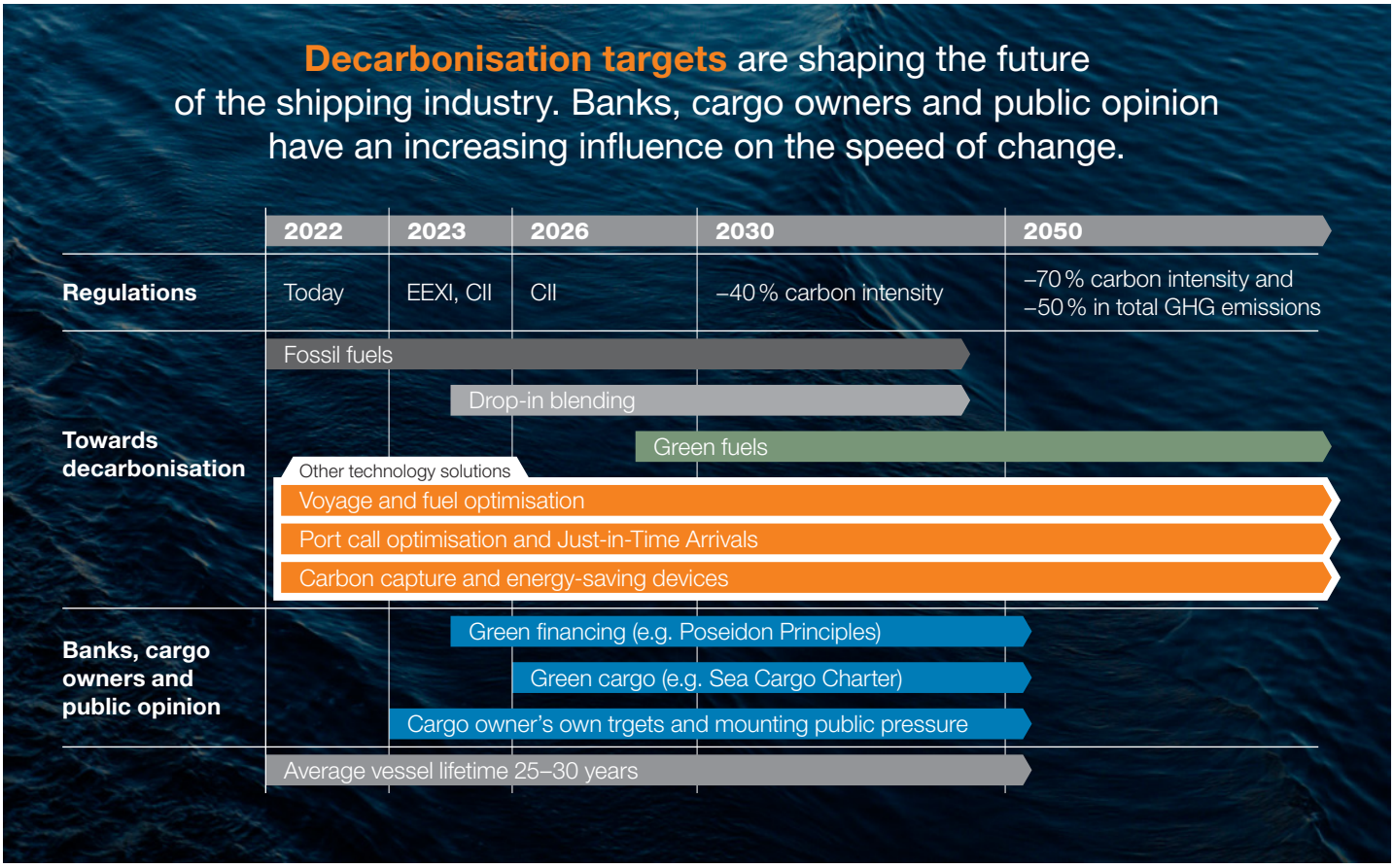
During the COVID-19 crisis, ports with a focus on digitalisation have gained a significant advantage over those that have not yet started the transition. Analysts are arguing how smart ports, that improve traffic visibility, is the remedy to alleviate the current crisis while preventing it from happening again.

IMO (International Maritime Organization) too finalised its Just-In-Time Arrival Guide for the industry this January. While BIMCO (Baltic and International Maritime Council) recently gave its stamp of approval to the concept by adding a new clause that encourages the sector to embrace JIT and its technology widely. Considering they are the largest international association of shipowners who control close to 65 % of the world's cargo, the move is bound to make a positive dent.

Similarly, the Digital Container Shipping Association (DCSA), which consists of the nine top shipping carriers globally, published its first Just-in-Time (JIT) Port Call programme last year. This will help streamline several key JIT port call processes for the different industry players.

Regulatory deadlines and policy pressures

The IMO has been pushing the pedal on greener operations with a bunch of policies and staggered deadlines going up to the end of this century. The first is to reduce emissions per transport work—or "carbon intensity"—by at least 40 % by 2030, compared to a 2008 baseline. Then, by 2050, to cut total emissions from ships to no more than half of 2008 levels—even with the subsequent growth in seaborne trade. Finally, to eliminate emissions altogether before the end of 2100. That's the long-term plan. But the latest MEPC announcement, released in November 2020, account for interim actions that come into play as early as 2022.



These short-term measures primarily revolve around adopting two indices—the Energy Efficiency Design Index (EEDI) and Energy Efficiency Design Index for existing ships (EEXI)—based on which all vessels will be given carbon intensity rating ranging from A to E, just like cars and other vehicles are given energy-efficiency ratings.

Ships rated D or E for three consecutive years would have to submit a corrective action plan to show how they could achieve a C or higher. On the other hand, administrations, port authorities and other stakeholders will be encouraged to provide incentives to ships rated A or B.

Therefore, there's a pressing (or even panicked) need to adjust current operations to be able to qualify in the upcoming ratings.

Thankfully, there are handy and cost-effective software plugins designed for all kinds of vessel classes, even older ships, that can take off the immediate heat.

03

Clouds with silver linings

The digital route to decarbonisation

In a utopian future, all ships would run on zero-emission clean fuels. But right now, the industry is caught in flux over the right green fuel hunt (there are many contenders), while regulatory deadlines are looming over the head. Shipping thus needs solutions that can abate climate damage today.

Fortunately, digital technologies have some solid answers ready.

For example, Wärtsilä Voyage's Fleet Operations Solution (FOS) is a cloud-based solution that has multiple software modules designed for vessels to achieve a good rating. It improves operations by focusing on speed, weather and route optimisation, reducing fuel consumption and operational costs. The solution also supports predictive maintenance for propeller, hull and engine condition.

90 % of data generated on board the ship **never leaves the deck**, which means operators are losing out on valuable insight and analytics that can improve performance and fuel efficiency. It's a similar situation at ports.

Source: Vodaphone

Intelligent voyage and route opitimisation

The FOS features, therefore, also reduce the risk of mishaps and cargo loss. There have been a series of incidents involving boxes falling off ships, harsh weather leading to engine failures or groundings, including the latest mishap at the Suez Canal. FOS offers full-scale navigational assistance through ECDIS, along with real-time forecasts and auto-updates on viable routes to improve voyage safety.

The software also makes compliance and reporting requirements transparent by acting as a collaborative platform for shipowners, operators, managers, and charterers. This is important as one of the major bottlenecks in maritime trade is a fragmented ecosystem. Typically, different companies handle different elements affecting a ship's performance. FOS unites all stakeholders under one platform and gives access to up-to-date vessel insights from anywhere and anytime. This helps reduce chances of error, cuts the crew's clerical workload and saves time.

Moreover, eventually, when ships switch to cleaner energy and have a smaller capacity to carry fuel onboard, FOS will continue to help optimise routes and operations, while cutting down unnecessary detours for refills and fuel wastage.

Keeping the competitive edge

Adapting the new cloud solutions, therefore, isn't just about regulations. It's also a matter of staying competitive and ahead of the curve. Not only do the delays and inefficiencies cost dearly in terms of anchorage costs, underutilised labour, and unutilised shipping capacity, it bears reputational costs as well. And the industry is beginning to understand that.

Lack of systematic digitalisation is now receiving more attention from shipowners and port management. Even the smaller ones, who previously may have had some wiggle room to procrastinate the transition, are now trying to get in the game.

Everyone knows, if left unchecked, lagging in tech upgrades that support better connectivity, safety, and operational efficiency could diminish a port's or shipping line's trade edge over the next few years

04

Tech-up the pragmatic way

The debut of Maritime 4.0

Shipping isn't untouched or unaware of the latest technologies. In fact, Maritime 4.0 debuted on the oceans a long time back. We have all seen autonomous zero-carbon vessels making splashes in the media. Unfortunately, these splashes have remained just that—splashes in the gigantic ocean trade.

And there are solid reasons behind why these "Teslas of the Sea" haven't taken over or made a global impact on shipping operations yet.

For one, because the concept is centred around new builds, while there is an existing global fleet of over 100,000 ships with an average age of 21.7 years and a lot of good years left in them.

Only **4.2% of the global shipping** fleet and **34% of newbuilds** on order are capable of using alternative fuel or propulsion. Which means, majority of vessels will have to find ways to decarbonise using an alternative solution mix such as energy-efficiency systems, digital tools, retrofits, lifecycle maintenance solutions and such.

Source: Clarksons Research

Up to 67 % of some container fleet segments (by capacity) are still in the order book, as per Clarkson.

"This means a lot of vessel technology decisions have already been locked to today's technology. This fleet will simply not go away even if the autonomous vessels were given a green light to take off tomorrow," explains Hendrik Busshoff, Product Manager Autonomy, Wärtsilä Voyage.

Plus, the average vessel capacity has nearly doubled in the last decade, and ships still continue to get bigger. A large containership is nearly 400 m long (or the distance around an Olympic running track) and can carry around 20,000 TEU. In front of that, an 80 m long battery-operated boat is basically a prototype. So, as of now, it is practically impossible to have so many autonomous vessels ready to take over the existing fleets tonnage capacity.

Then, there are regulatory and safety issues. It's a lot easier to get regional approvals for short-distance inland and coastal vessels that operate in restricted waters than to get IMO's nod on container vessels performing intercontinental voyages autonomously.

In short, it's neither commercially viable to retire the current fleet overnight, nor is it practically possible to have so many new builds ready in a short span to replace the existing fleet.

Completely crewless deep-sea vessels in the future. But autonomous technology can already solve today's shipping problems—improve safety, reduce human error, ensure fuel efficiency, decongest ports, improve the inland logics chain and help shipping become greener.

Smart Autonomy is a spectrum—from retro-fitting and automating a part of operations for better efficiency and safety, advanced sensors and decision-support systems that reduces human error to fully autonomous new builds being designed for the future.

75–96%

of shipping insurance losses can involve human error, equivalent to **$1.6 BN**—something that smart navigation, sensor technology and advanced situational awareness can significantly reduce.

Source: Allianze Global

Souping up existing fleets

For reference, it took roughly 140 years for the last of the sailboats to disappear after the first steamships surfaced. While technology moves much faster today, the transition is still bound by certain technical and economic restraints.

Wärtsilä Voyage has, therefore, come up with a staggered and step-by-step approach to assimilate intelligent technologies. This will help create immediate and quantifiable operational value, make shipping greener and safer starting today while opening the pathway to future vessel autonomy.

MV American Courage, a classic 1970s freighter with retrofitted automation technology is the biggest vessel ever to perform automated dock-to-dock operations.

A case in point is American Steamship Company's (ASC) MV American Courage. Recently, Wärtsilä Voyage souped up this classic 1970s freighter with the latest automation technology, making it the biggest (and, at 42 years, probably the oldest) vessel ever to perform automated dock-to-dock operations.

The vessel has a cargo-carrying capacity of 24,300 gt and can shuttle in the narrow, winding, and heavily congested waterways of the Cuyahoga River in Ohio, US. Mind that the technology isn't about an empty wheelhouse. Instead, it's a solution that enhances the crew's current capabilities and precision to traverse tricky waters and perform complicated manoeuvres, ensuring every trip is conducted safely.

Getting the crew onboard

Over **1.65 million** seafarers serving on merchant ships alone who'd need to be trained for the adoption of new greener and smarter technologies—a huge reskilling challenge that simulator training can solve in a safe and cost-effective way.

Source: International Chamber of Shipping

It's not just about upgrading the ships. The global seafarers' pool (over 1.65 MN serving on merchant ships alone) needs to be upskilled as well.

In ASC MV Courage's case, the crew were given a switch to bifurcate the new system to support acclimation and training. Multiple captains were brought to Wärtsilä's facilities just to learn what the technology is. So, rather than starting with mechanics, first, the focus was on the underpinnings. As the crew became familiar, training and installation began. And even then, they were given an option to switch back to the old system as a comfort. Finally, when every member onboard got confident, the new system became fully mature.

Like the airline industry, as officers work around more sophisticated navigation equipment, solutions that support regular and thorough preparedness without putting too much at risk will be vital to ensure that the industry doesn't fall into a skill gap. Cloud simulation training, which comes with the convenience of anytime, anywhere training is therefore touted to play a massive role in smoothening the training and familiarisation process.

Another corner that the industry needs to iron out is having a common and open platform, which helps close the skill gaps by continually supporting mariners to upgrade their competence. Wärtsilä Voyage and OTG have already begun laying the foundation for that.

05

Mobilising the real shipping 4.0

The bottom line is

The fastest and smartest way to unlock shipping's 4.0 is to focus on today while taking steady steps towards tomorrow.

Like in aviation, fully autonomous sea-going ships may not realise on a large scale anytime soon. However, there is plenty of other trailblazing technology to be excited about right now—**solutions to digitalise, decongest and decarbonise today's ocean trade and unlock the full potential of a well-oiled global logistics chain.**

They are not only a cost-effective and straightforward way to implement next-gen tech but also a more practical way to ramp up for future aspirations.

Think of it as an evolution, not a revolution.

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