





# RETHINKING DIGITALISATION

Turning towards a technologically advanced future, the shipping industry is faced with the question of what digitalisation has to offer, **Abby Williams** reports

**T**he shipping industry has been left with little option but to adapt to an increasingly digitalised landscape after a multi-faceted supply-chain crises hurtled it a broad digital transition.

A 2021 report from maritime innovation consultancy Thetius and the Inmarsat Research Program suggests the pandemic's impact on shipping is evidenced by an increase in remote services, online crew training, demand for e-commerce and online cargo booking platforms.

Based on data collected over the duration of the pandemic, Thetius estimates the digital maritime industry, encompassing digital products and services in the sector, will be worth \$345 billion by 2030. The figure is up from a pre-pandemic forecast of \$279 billion.

Some experts believe the industry is struggling – and often reluctant – to keep pace with the digital advancements, while others argue it is driving these advancements. In either case, COVID-19 and its impact on supply chains have accelerated the transition. A global reaction to the crisis has turned sophisticated technologies into necessities and has highlighted the need for supply-chain visibility and broader digital literacy.



Digitalisation can unlock tremendous efficiencies at ports

**SUPPLY CHAIN VISIBILITY, OR LACK THEREOF**

MPC International managing director and supply-chain expert Peter Creeden refers to this evolution as the digitalisation curve, tracking industries from a stage of limited digital technology usage to stages of advanced digital technology and use of data analytics.

Mr Creeden positions the transport and logistics industry at the lower end of the digitalisation curve, but within the second of three stages. Here, digital engagement with customers is increasingly important, and advanced data analytics are used to personalise the customer experience.

According to Mr Creeden, the logistics industry is well behind automotive and aviation industries in this regard, but there appears to be a lack of agreement as to where the industry as a whole is currently positioned along the digitalisation curve.

“I firmly believe the industry is moving into stage two, focusing on communicating between companies, traditional transport providers, port companies and their customers; however, it still seems that the industry is stuck on just trying to grapple with what digitalisation means to them,” he said.

Mr Creeden said one of the biggest problems in the industry is the lack of supply chain visibility. He said IT

vendors are now receiving funding to improve visibility in the industry, but the onus is on shipping lines, freight forwarders, and trucking companies to embrace the concept of visibility and the supporting technology.

A widespread lack of digital literacy has seemingly created a barrier in achieving this visibility. Out-of-date vessel data and difficulties tracking cargo are still significant issues, and beneficial cargo owners are pushing for more information from their suppliers. As such, the industry is undergoing a transition to readily provide this information across everyone’s systems.

“At the moment, if someone wants to find out whether their containers are available to be picked up at the wharf, it is still very common for people to either send an email to their freight forwarder or trucking company, and then they to log into a website connected to the terminal operating system or through the 1-Stop system. The process isn’t as streamlined or as seamless as it should be,” Mr Creeden said.

**A NEW PERSPECTIVE**

While the shipping industry is widely perceived to have been slow to embrace digitalisation, an alternative argument is that the industry is nearing the forefront. However, isolated advancements



The industry has been moving with the times as technology becomes available, but in some cases, we’ve actually been leading it.

Jillian Carson-Jackson, president, Nautical Institute

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## FUTURE INTERNATIONAL TRADE ALLIANCE

■ In February this year, the DCSA signed a memorandum of understanding with BIMCO, the International Federation of Freight Forwarders Associations, the International Chamber of Commerce, and SWIFT to standardise the digitalisation of international trade.

The alliance broadly aims to promote common and interoperable data standards and legislative conditions across international platforms. It does this by encouraging the adoption of a universal electronic bill of lading. According to the alliance, the e-bill of lading would simplify and secure international shipping.

At the formation of the alliance, DCSA chief executive officer Thomas Bagge said universal e-bill of lading would depend on cross-industry collaboration. It marked a milestone in a vision to standardise all container shipping documentation.

“An incredibly diverse set of stakeholders touches the bill of lading transaction – from government regulators, to insurers, to shippers from every industry. To achieve widespread use of eBL, they must all be on board with adopting digital bill of lading standards.”

throughout a complex industry create the illusion that progress is slow. Jillian Carson-Jackson, president of the Nautical Institute, said progress may be disjointed, but it will become more visible once digital facets of the industry begin to interact.

“Digitalisation is when you start to leverage the digital environment to improve your business,” she said. “If we think about that concept, the maritime industry has actually been doing that for quite some time.”

An expert in maritime navigation, Ms Carson-Jackson highlighted the digital capability of vessel traffic services; the transition from radars to automatic radar plotting aids on ships and from raster to vector navigation charts; and the increasing use of digital data.

“The maritime industry might consider itself to be a slow adopter of digitalisation, but in a way, we’ve actually been doing it for a long time,” she said.

Ms Carson-Jackson believes shipping is experiencing a transition from what is known as Industry 4.0, which relates to cyber systems, the internet of things, and networks; into Industry 5.0, which revolves around human-machine integration.

“It all links back to the concept of digital transformation and moving into what some people are calling the dynamic enterprise, which involves responding to changes in technology and expectations. We’re starting to see the links between the ship and the shore, and visibility along the entire cargo chain.

“The fact is, the industry has been moving with the times as technology becomes available, but in some cases, we’ve actually been leading it.”

Noting a recent ambition to digitalise the entire VHF mobile band – which was deemed premature at an International Telecommunication Union conference in 2019 – Ms Carson-Jackson challenged the perception that the maritime industry is lagging.

“I think we need to look critically at what the maritime industry has done – which is a significant amount from a digital point of view – and then identify where the gaps might be, or how we might work together to begin to see the entire picture, Ms Carson-Jackson said.

“We’ve got these pieces of the puzzle that are coming together, and we’re starting to see the ship-to-shore digital exchange of data, but now we need standardised data formats.”

### THE PURSUIT OF DATA STANDARDISATION

A dominant element of digitalisation, effective use of data, has the capacity to shift the industry away from lingering non-digital workflows. However, the advantages of data in terms of visibility are impeded by the issue of poor data hygiene.

Years of manual processes across the logistics industry has led to volumes of inaccurate and flawed data tarnishing that which could be used to benefit the industry. Mr Creeden said the problems can be traced back to documents passing repeatedly through the hands of different individuals and organisations, opening up opportunities for mistakes and inaccuracies.

“The benefit of digitalising is eliminating the process of printing the document, handing it to



It still seems that the industry is stuck on just trying to grapple with what digitalisation means to them.

**Peter Creeden**, managing director, MPC International

Image supplied

someone else, and having them re-key it into the system,” he said.

“That’s where the data hygiene problems come from, because if there are, for example, 21 steps in the supply chain, people are re-keying the information about 15 times, and that has to stop.”

He has observed that some companies are confusing the concept of digitalisation with that of computerisation, which are two very different strategies. While digitalisation is supporting a digital future, computerisation contributes to the poor data hygiene slowing the industry down.

“Computerisation is when you take a regular process and put it onto a computer,” he said.

“It’s no better than just typing your records into Excel. Digitalisation is how you actually use the data that’s already there, and have it share between different applications or companies on or across multiple platforms.”

One solution is data standardisation. The Digital Container Shipping Association, an independent organisation founded in 2019 by nine major shipping companies, has established IT standards to help the shipping industry bridge what they describe as a “digital divide” and clean up flawed data.

The prescribed DCSA standards were developed in conjunction with founding members MSC, Maersk, CMA CGM, Hapag-Lloyd, ONE, Evergreen, Yang Ming, HMM, and Zim. The digital connectivity and data communication achieved through application of the standards is intended to be leveraged by industry stakeholders.

DCSA envisions a supply chain with such clarity that end-to-end shipments can be tracked seamlessly and in real time across multiple modes of transport. The exchange of data between multiple platforms is a fundamental component of this goal.

The emerging prospect of a platform with the capacity to facilitate the global exchange of data and achieve supply chain visibility has triggered a wave of investments. Billions of dollars are now being poured into the industry to establish a dominant logistics platform. Comparing this to the duopoly that currently exists in the smart phone industry, Mr Creeden said companies are moving to develop a global logistics system similar the IOS platform or the Android platform.

The race to establish these global logistics platforms is underway. Mr Creeden said WiseTech Global, DP World, Microsoft, e2open, Blume Global, and TradeLens are among the companies hoping to become the default standard.

“This industry is exploding on the digital side of what’s called the LogTech industry,” he said. “In a year or two we’ll see the real players start to gather power, and we will see a consolidation of the market. Right now, the market is still too new and too excited, but consolidation will come when the industry realises that some companies have a service offering and others do not.”

#### SEAFARER CONNECTIVITY IN A DIGITAL FUTURE

The industry’s transition toward a digital future coincides with discussions around securing connectivity for the seafaring workforce. Talks and initiatives have gained traction amidst the crew change crisis, though crew connectivity has still arguably received less attention than digitalisation across the industry itself.

Ms Carson-Jackson highlighted the issue of internet access onboard vessels, which is still lacking. She said some ships have Wi-Fi to support the business side of operations, but crews are being left behind.

“From the seafarers’ point of view, digital connectivity means they will know when something

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## THE NATIONAL FREIGHT DATA HUB

■ Drawing on information from the Bureau of Infrastructure and Transport Research Economics (BITRE), the National Freight Data Hub has been highlighted as a seminal development in the digitalisation of Australia’s freight and logistics sector.

Currently a prototype website, the data hub was established through a \$16.5 million investment committed by the Australian Government over four years, beginning in May 2021. It will evolve into a platform facilitating the exchange of data, the establishment of data standards, and access to freight data.

In doing so, it intends to improve strategic planning for infrastructure and transport network investments, and to use data to support day-to-day operations. It will also be used to evaluate the national freight system’s performance and identify strategies to improve it.

goes wrong at home when they’re so far away ... but it is also an expectation of society,” she said.

Mission to Seafarers has found that internet access is an issue raised constantly by crewmembers through the charity’s ongoing Seafarers Happiness Index surveys.

Seafarers have reportedly expressed a strong desire that they soon will be able to access internet on all ships they work on, with reliable bandwidth and

download speeds, and without having to consider the cost of connection.

The ongoing survey has indicated Wi-Fi not only helps seafarers to overcome loneliness at sea, but its availability may also determine whether crew sign on to a ship at all.

According to the results, some seafarers are willing to leave jobs or they occasionally refuse to join vessels where internet access is not provided.

Ms Carson-Jackson said the societal expectation that each individual can connect with others via internet is reinforced by the United Nations’ assertion that internet access is a human right. Denying seafarers of this right may even contribute to shortages in the workforce.

“If we’re going to have people willing to continue to go to sea, then we’re going to have to look at this concept of seafarer connectivity,” she said.

“Connectivity is expected – it’s a societal expectation. If we want young people to go to sea, they’re going to expect to be connected just like we are. Sometimes it might not be the best connection, but it is an expectation.

“We can’t stop that from happening, and as we are looking towards Industry 5.0, which is going to be characterised by human-machine integration, we are now looking at this collaborative approach with humans and machines.” ■

## FLOW DATA-SHARING INITIATIVE

■ March this year, the US government launched an initiative to alleviate supply chain bottlenecks through data-sharing between shipping industry stakeholders.

The Freight Logistics Optimization Works (FLOW) initiative includes 18 initial participants, including three US port authorities, two terminal operators, and shipping companies CMA CGM and MSC.

A statement from the White House briefing room said the FLOW initiative was designed to support businesses across the supply chain and improve accuracy of end-to-end information to maximise supply chain resilience.

Companies partnered under the initiative will work to develop a more efficient and transparent method of sharing information. According to MSC, they will aim to create a new digital tool enabling each company to share accurate, cargo-related data in real time.

“We strongly believe that a common and interoperable digital infrastructure throughout the container shipping industry is a critical step to make supply chains more efficient, secure and resilient,” MSC chief digital & information officer André Simha said.

“Collaborating with governments and other key industry stakeholders is of paramount importance to MSC and there is no doubt that this initiative will strengthen the foundation for the seamless, end-to-end exchange of information we all need to keep global trade moving today – and tomorrow.”



FLOW is designed to improve data accuracy

MSC