

# BUNKERSPOT

## BETTING ON SHORE POWER

THE DRIVERS AND CHALLENGES FOR COLD IRONING

INSIDE:

NEW ZEALAND MARKET FOCUS

RISK MANAGEMENT

TRADE FINANCE

FUEL BLENDING



# Collective action

Cutting edge technological innovation is enabling shipping to deliver on its decarbonisation targets and, as **Daniel Saunders** and **Mark Tooke** of WFW explain, shipowners are also beginning to join the ranks of the ‘tech investors’

It's a familiar daydream for people across the world – imagining the exciting new technology the future will bring. For many growing up it was the classics: Hover boards to zip us down the sidewalk. Jet packs to propel us through the air. And, could you imagine, telephones which would allow us to talk face to face on a screen (little did we know how fast 2020 would ruin the thrill of that one).

Now, as shipping professionals, it is exciting to watch the industry's imagination take flight in a similar way when tackling the big issues that it faces (granted, with much more attention to physics, engineering and real-world application than childhood imaginings).

In the area of propulsion, the range of developing technologies in the marketplace are as diverse as they are fascinating. From

wind propulsion systems such as kite sails and the resurgent technology of rotor sails, through to solar and bio-diesel powered systems, it seems every avenue is being explored in an effort to achieve the twin goals of environmental sustainability and OPEX efficiency.

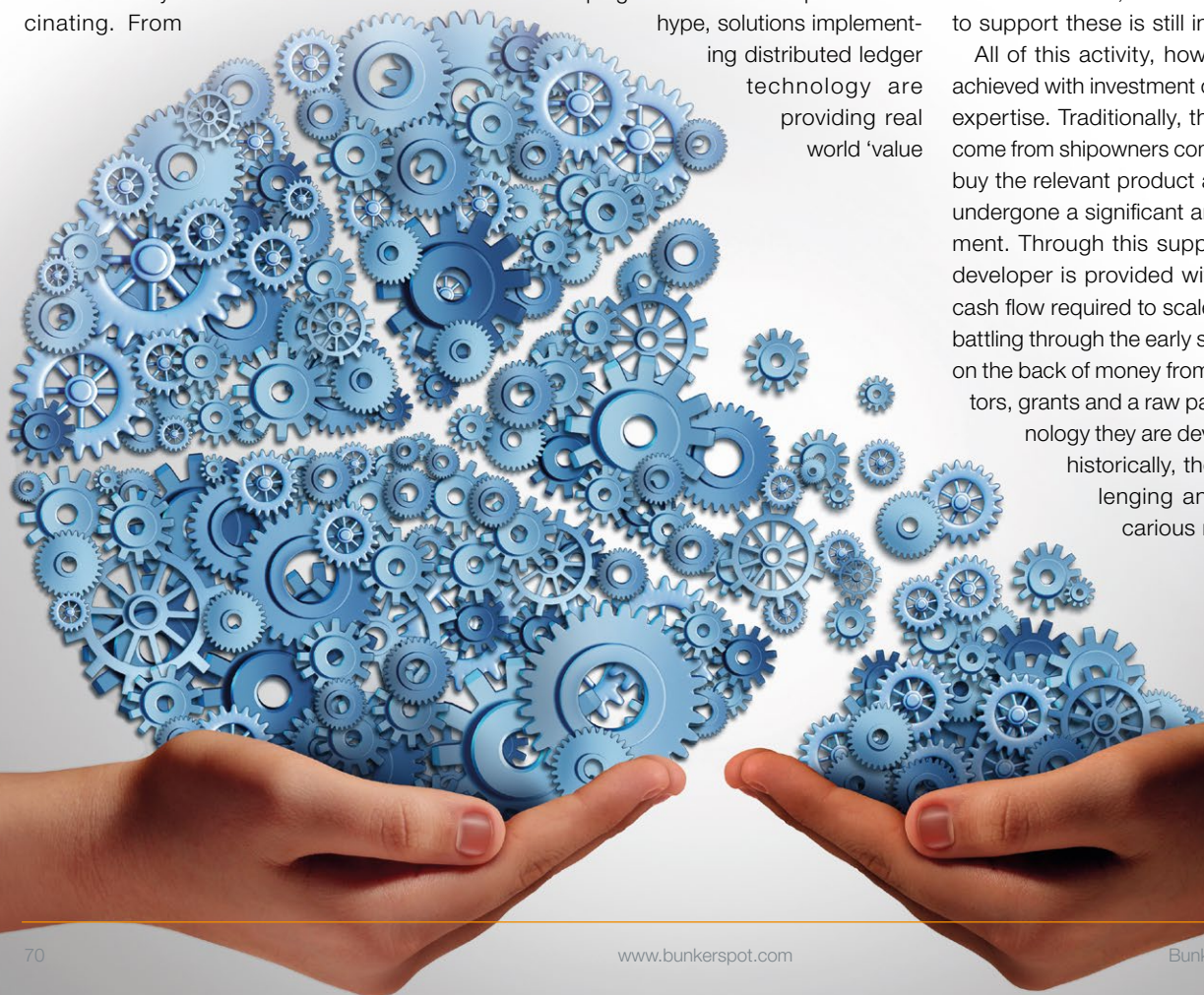
The range of data driven technologies in development is also impressive. In order to stay a step ahead of the competition and the regulators, there is an increasing focus on the ability to capture and interrogate operational data to achieve greater efficiency and safety. Data analytics software, data management tools and cloud based computing are all areas that are seeing activity as well as areas where hardware meets software such as automation, robotics, sensor technology and ‘smart’ shipping. Whilst blockchain in shipping has failed to live up to its initial

hype, solutions implementing distributed ledger technology are providing real world ‘value

add’ in areas such as marine insurance and bills of lading. Drawing all of this together, a number of emerging platforms offer functionality that consolidates disparate data feeds, facilitating access to and reporting of the vessel performance data and other information that is essential to achieving environmental, social and governance (ESG) objectives.

Then there is the continuing development of a range of alternative fuels which is also driven by both environmental and cost efficiency factors. The yard order-book is evidence of the industry being prepared to embrace dual-fuelled ships and certainly LNG-fuelled vessels have received the most attention and investment when it comes to infrastructure. However other fuels such as ammonia and hydrogen are starting to emerge as realistic alternatives, even if the infrastructure to support these is still in the early stages.

All of this activity, however, can only be achieved with investment of time, money and expertise. Traditionally, this investment has come from shipowners committing to test and buy the relevant product after it has already undergone a significant amount of development. Through this support, a technology developer is provided with the capital and cash flow required to scale up, but only after battling through the early stages of its growth on the back of money from early stage investors, grants and a raw passion for the technology they are developing. However, historically, the technically challenging and financially precarious nature of the early



R&D phase has undoubtedly slowed the pace of technological innovation in shipping.

However, in recent years there has been a significant increase in M&A, joint venture and direct investment activity in maritime technology from investors both within and outside of the maritime industry. This activity is only set to grow.

Arguably, the four main catalysts for investment in maritime technology are:

- **Legislation and regulation:** Legislation and regulation are likely to be the primary drivers of real change regarding the adoption of, and therefore investment in, new technologies. This is especially true in relation to technologies that carry with them an environmental sustainability benefit. This could prove to be an incentive for investors to back the technologies that may become a necessity for owners in the years to come. The scale of investment required to reduce emissions in accordance with rules passed last year by the International Maritime Organization (IMO) is estimated to be as high as \$1.4 trillion.
- **The success of technology investment in other established sectors:** Significant success has been achieved by investors deploying capital to develop technology in other established investment sectors such as fintech, healthcare, telecoms, infrastructure and big data. With around 90% of the world's goods being transported by sea, the shipping sector is a necessity for the world's economy to operate and therefore investing in the technological evolution of shipping is potentially more attractive than investing in other, more speculative, sectors.
- **An existing class of investors willing to provide funding for unproven ideas:** Venture capitalists love trying to find the next big idea to invest in. Do they all work out? Obviously not. But when they do work out, an early investor can really reap the rewards. Whilst the traditional larger financial institutions and family offices are needed to fund the substantial capital expenditure required to build or purchase a vessel, the ticket size for a maritime technology investment is much lower, opening the landscape to a wider universe of speculative investors from outside of the maritime industry looking to fund the next 'big thing' in shipping.
- **A vested interest for owners and operators:** Ship owners and operators see that the future success of their business lies in staying ahead of the technology curve. Shipping is ultimately a margin game and traditionally capital expenditure and

investment outside of core business lines or absolute necessities have been viewed as a negative factor in achieving desirable overall returns. Shipowners are beginning to recognise that, with a little capital investment now, they could be a stakeholder in a new technology that widens their margins in the future. If the technology is successful, this might lower the risk of later requiring large scale capital deployment to adopt or deploy a similar product, not to mention sharing in the profits realised by selling the product in the market if it is a technology that is widely adopted. Imagine, for example, the advantageous position one of the larger scrubber-adopting lines might have found themselves in if they took a minority investment in a scrubber manufacturer in 2016?

Despite these significant motivations, investment in and adoption of new technology is a big decision for industry operators. As an example of the diversity of reactions to committing to significant capital expenditure in maritime technology, we can look at the wide range of approaches by industry players in respect of the purchase and installation of scrubber technology versus the utilisation of low sulphur fuel. It is a bold organisation that commits capital to the development or acquisition of a particular technology with no certainty of success or that wider market adoption will follow.

It has become clear that investment in maritime technology will not be limited to financial backers such as venture capitalists, funds and private equity houses. To the contrary, investment could quite possibly be led by owners, operators and other commercial players in the maritime industry making strategic investments in technology companies and R&D initiatives designed to give them a jump on their competition. We have already seen examples of the forms in which such strategic investment could come in:

- acquisition of early-stage companies that are already making an impact with their proven technologies as seen by both Alfa Laval's acquisition of StormGeo, a weather intelligence and advanced data science solutions company, as well as Maersk Growth leading a sub-participated \$3.5 million seed round investment in Torch Logistics, a short-haul logistics technology provider;
- entering into joint ventures with technology developers, as seen with Ardmore Shipping announcing that it has formed and invested in a new joint venture with Element 1 Corp. and Maritime Partners, LLC to seek to bring Element 1's methanol-to-hydrogen technology to market;

- the establishment of commercial foundations for research and development in which owners have a direct stake such as the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping which seeks to work towards the development of new fuel types and technologies; and
- investment in people by bringing talented innovators 'in-house' to develop proprietary technologies for a ship owner's own fleet with a view to giving their vessels an advantage over the competition or to monetise the investment further by selling it back to the wider industry. However, although it cannot be ignored that wider adoption of a technology developed by a major owner or manager presents its own challenges and a spin-out or joint venture approach may be preferable.

Any and all of these structures may be well suited to bigger market players. Not only do they have the existing infrastructure and resources to back the levels of investment, but insofar as they are ship owners or operators they also have access to a fleet on which new technologies can be trialled and tested and not to mention a great deal to gain if the resulting technology proves to be a winner in the market.

For big and small operators alike, however, minority investment and/or joint ventures for the development of technology may be seen as a more attractive option for those operators to share risk and the financial burden of R&D. Such an approach would enable them to secure priority access to new technology while retaining flexibility to mitigate their exposure to large scale capital investment that may be required due to, for example, legislative changes.

One thing is clear, however: when it comes to investment in technology in the maritime sector, in this age of increasing regulatory burden, societal scrutiny and ESG accountability, the risk of ignoring it outweighs the costs of exploring it. After all, history's most celebrated explorers are all seafarers – perhaps the future's most celebrated seafarers will be explorers of a different kind.

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 Daniel Saunders and Mark Tooke are Corporate and Maritime Partners based in the London office of WFW. A link to a recording of WFW's recent webinar on Maritime M&A, including a discussion on investment in maritime technology, can be found at [www.wfw.com/events/maritime-webinar-series-episode-1](http://www.wfw.com/events/maritime-webinar-series-episode-1)

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