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Lloyd's List 
Special Report

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Why digitalisation is the game-changer shipping needs as it charts a path to a cleaner, greener and more efficient future



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About Wärtsilä

Wärtsilä is a global leader in smart technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation, total efficiency and data analytics, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers. In 2018, Wärtsilä’s net sales totalled EUR 5.2 billion with approximately 19,000 employees. The company has operations in over 200 locations in more than 80 countries around the world. Wärtsilä is listed on Nasdaq Helsinki.

About this Report

Between September 2018 and May 2019, Wärtsilä Marine Business and Lloyd’s List have collaborated to understanding the evolution of the shipping industry in the context of volatile geopolitical and environmental worlds. Shipping has now been exposed to the benefits of digitalisation for more than five years, however the level of engagement – while increasing – remains low.

In order to understand the industry’s attitude to data-driven solutions, this Special Report draws on the findings of a [Sustainability Round table](#) (September 2018), [Outlook 2019 webinar](#) (December 2018), an industry survey [Digital Solutions/Transformation Survey](#) (February 2019) and subsequent coverage in *Lloyd’s List* [Digitalisation survey identifies owners’ enthusiasm for new tech](#) and another webinar [Next Steps in Digitalisation webinar](#) (May 2019).

Where are we today?

There are many external threats to the shipping industry, from trade tensions and sanctions to territorial disputes and market volatility. These are well known but finding answers is just as hard as ever. One solution has been for shipping businesses to form partnerships and alliances in a bid to gain resilience, however in the face of threats from external actors such as Amazon and Alibaba, shipping has to go beyond consolidation. Shipping is likely to become an element in a reshaped supply chain.

Speakers on the Outlook 2019 webinar agreed that shipping is unprepared for such an unprecedented level of uncertainty. Investing in next-generation technology is often suggested as a way to retain control, however Roger Holm, head of Wärtsilä's Marine Business, makes the point that technology is a means to an end, not the end in itself. The discussion is moving from technology to the value offered by that technology.

According to the findings of our survey of the industry, shipping executives identify increasing operational and fuel costs as their biggest challenge, followed by market volatility; safety, security, health and environmental issues; and crew availability.

The issue of shipping's relationship with the environment is rising up the agenda.

“We need to move the discussion from technology to value – there’s no sense in investing in technology if there’s no value”

Roger Holm

President Marine Business and Executive VP
Wärtsilä Corporation



Sustainability – the alignment of maritime within the broader logistics sector in a way that seeks to minimise its impact on the environment – is likely to become shipping’s greatest challenge. As the Round table discussion at SMM in Hamburg heard, shipping’s business model needs to embrace systemic, rather than incremental change if sustainability goals are to be achieved.

So far, efforts to become greener have involved bolting-on initiatives each of which reduce fuel emissions by a couple of percentage points. This is regarded as too slow to implement and too limited in scope not only by environmental activists, but increasingly also by bankers, charterers and shareholders.

Sustainability is no longer regarded as focused on carbon and fuels: it has become a mindset issue, requiring education at every level of society.

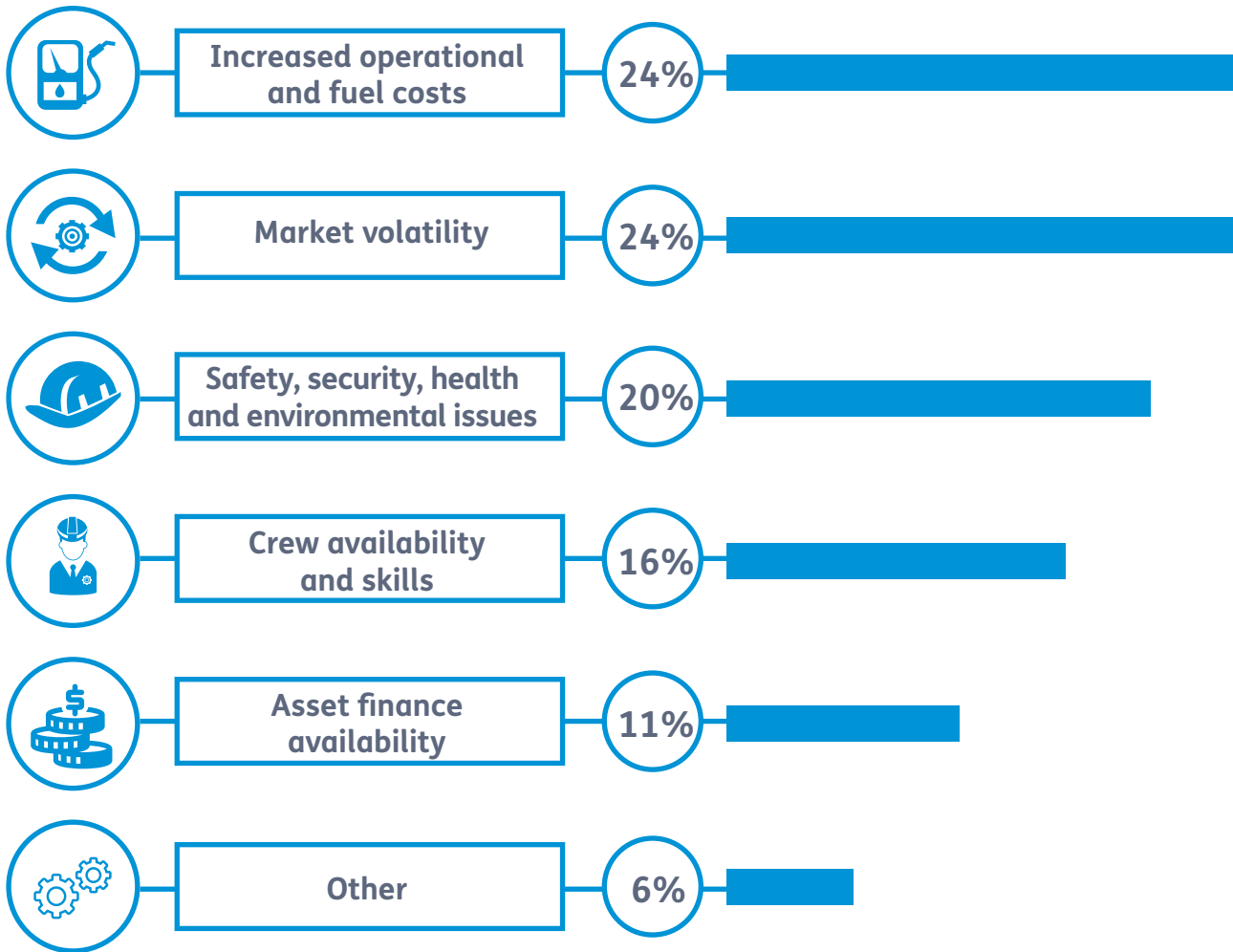
Shipping continues to be focused around the ship for all economic purposes. Speakers believed this is unsustainable. In future, the focus will be on shipping’s role in enabling sustainable societies, and its willingness to take responsibility for decisions and actions that have an impact on the environment.



Main Challenges & Targeted Investment

The top 3 challenges cited by respondents were; rising costs (operational & fuel); economic uncertainty and greater risk and regulation issues. The main solutions to combat these challenges has been to invest in digitalisation (technical & operational), training and engine efficiencies (only 3% of respondents cited that they were not undertaking investment).

WHAT ARE THE 3 MAIN CHALLENGES YOUR COMPANY FACES?

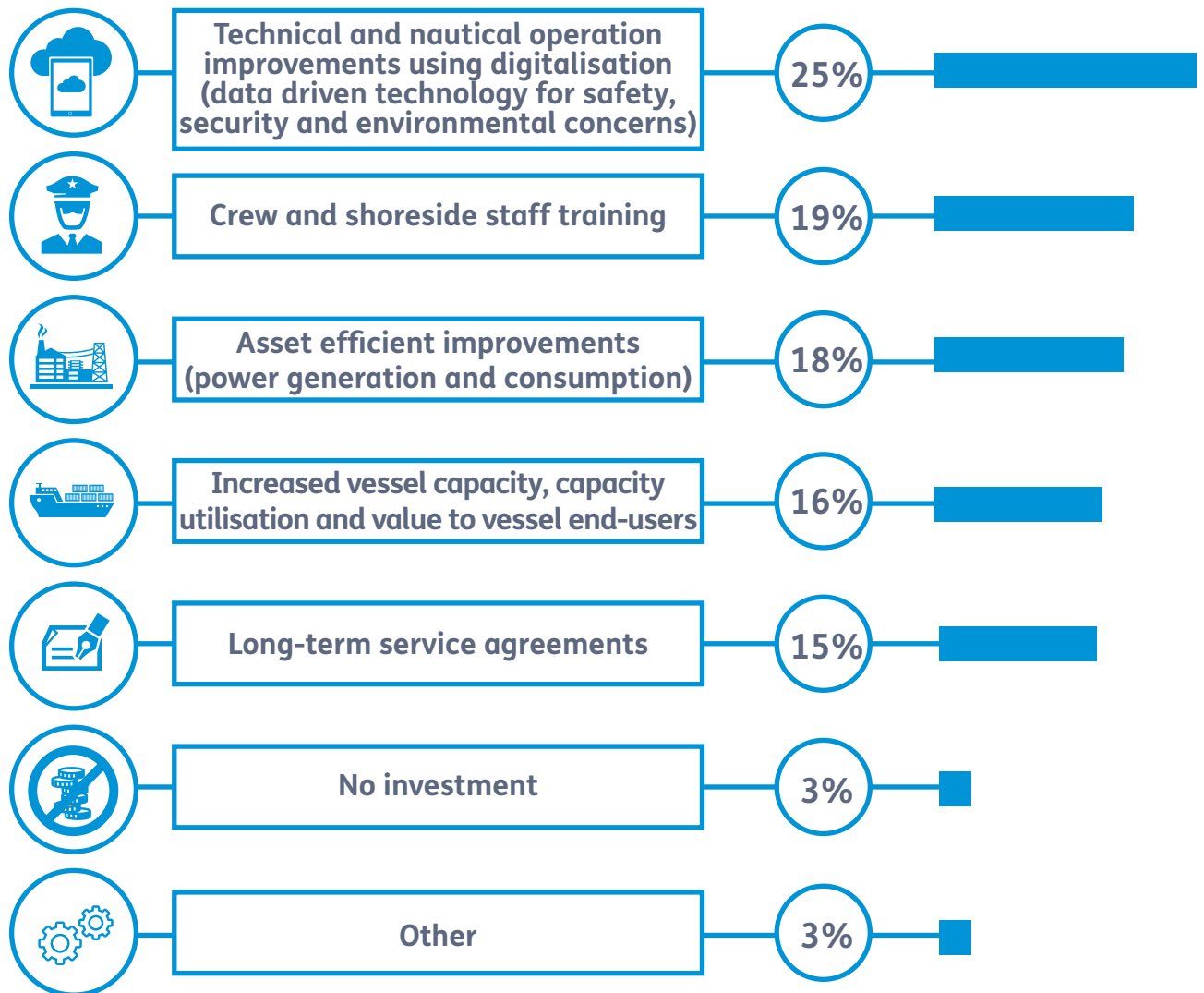


Base: All respondents (n=150); multiple answers permitted (n=450).
¹Other Inc. See slide 30.

More than half of senior management respondents believed digital solutions were very important (52%) or extremely important (12%) to leadership.

Only 5% did not think digitalisation was a useful option in the toolbox.

Where will investment be targeted to help solve these challenges? (please select up to 3 options)



Base: All respondents (n=150); multiple answers permitted (n=380).

¹Other Inc. Governmental subsidies, Alternative finance, Increase efficiency using digitalisation, Streamlining of Statutory / National clearances & Technical development, Financing, low management fees, cut down expense, Maintenance, Commercial digitalization & capable and risk taking people.

Two-thirds of shipping companies have started on their digital journey, according to a survey conducted by Lloyd's List on behalf of Wärtsilä Marine. With the support of positive leadership within their companies, respondents pointed to an emphasis on fleet management data analysis and digital technology to aid vessel operations and security issues.

Encouragingly, digital solutions were specified as the main target for investment to address the main challenges. Ship owners and operators placed digital technology at the top of the list, with all shipping segments turning to digitalisation, especially respondents in tanker shipping (27%), although containers, dry bulk, and offshore respondents were not far behind.

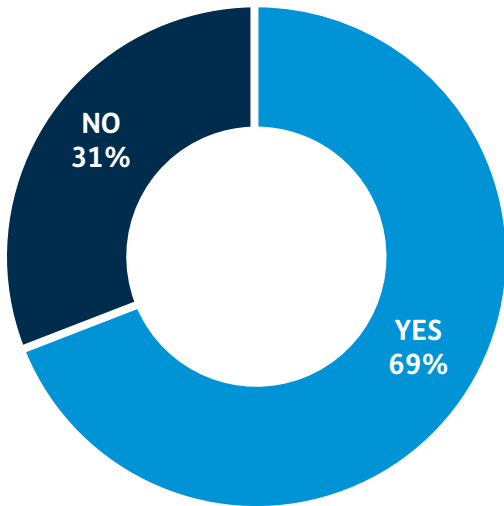
Asked to identify which digital solutions their businesses have invested in so far, it was encouraging to see that 53% were focusing on fleet data analysis and operations to solve their challenges. However, cyber security was only selected by 14% of respondents. The more specialised solutions – predictive maintenance, artificial intelligence, keeping an electronic log book, digital twinning, and blockchain – were chosen by 11% down to 3%.

Digital Solutions Exploration & Investment

Just under $\frac{3}{4}$ of respondents cited that they had explored digitalisation to solve their current challenges, with data, operations (technical & nautical) and security being the most popular areas for investment.

HAVE YOU EXPLORED INTEGRATED DIGITAL SOLUTIONS* TO SOLVE YOUR CURRENT CHALLENGES?

(*Using digital technology to upgrade performance and efficiency through the management of multiple processes and systems on vessels.)

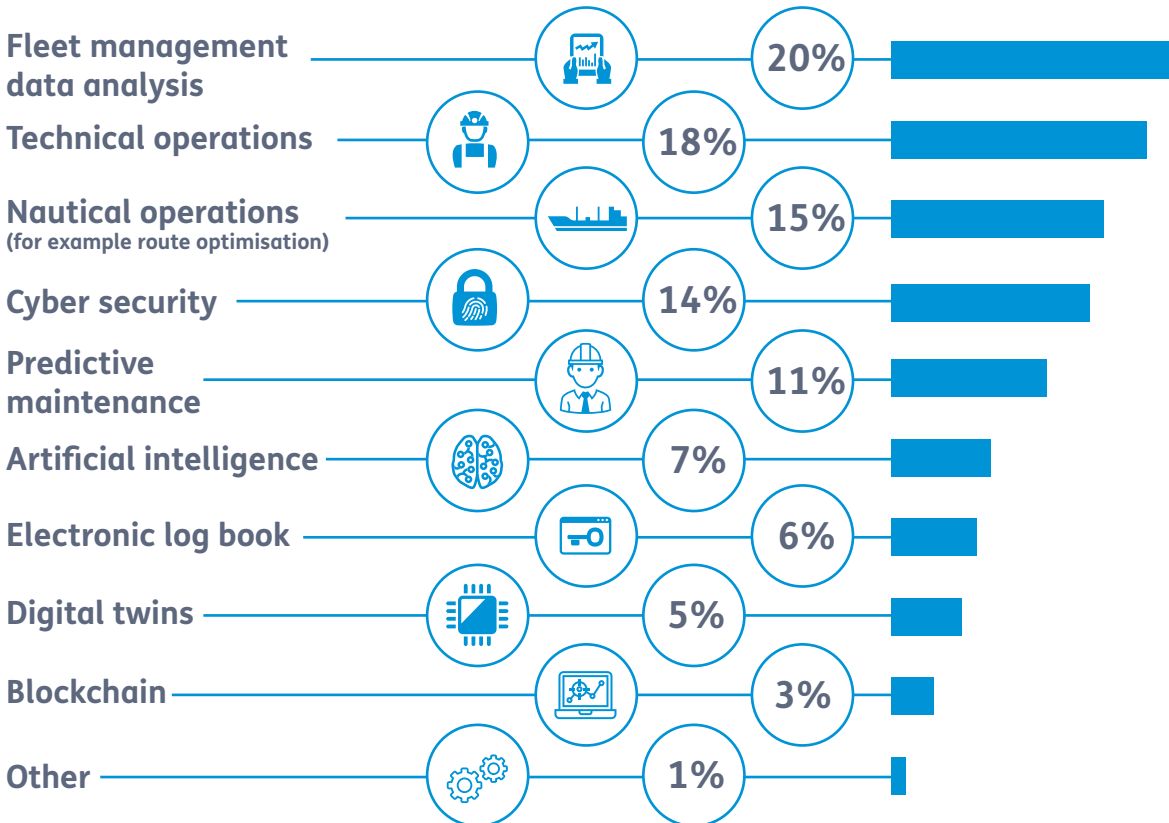


Base: All respondents (n=135).

Base: All respondents (n=91); multiple answers permitted (n=301).

¹Other Inc. Keeping up to date on all available technologies, Ecdis, ISM and quality software & TMS and WMS.

WHAT DIGITAL SOLUTIONS HAVE YOU INVESTED IN ALREADY?



The greatest level of very satisfied and extremely satisfied users was among ship managers, with one manager sharing the observation that “improvement in productivity is immediate”.

Even so, users of digital technology had mixed views about the experience. Two-thirds (67%) described themselves as only moderately satisfied with the outcome, while a further 12% were dissatisfied. Fewer than one in five respondents praised digitalisation highly for its ability to reduce risks and costs.

Reasons for only moderate satisfaction included the costs involved and the lack of standardisation across digital solutions. Dissatisfied users bemoaned the fact that suppliers seemed too keen to sell products rather than solving the challenges faced by potential customers.

The survey asked for the key reasons for the slow uptake of next-generation technology. The biggest hurdle identified was the lack of integration with existing equipment (23%), followed by lack of knowledgeable people within the business (18%), and uncertainty about which option is the best fit for the company’s business.

When asked to outline why these obstacles were chosen, respondents pointed to the cost of installing solutions, the need for continuous training of sea and shore staff, limited financial resources for untested technology, and issues with changing requirements of compliance.



Taking the next steps in digitalisation

Leadership in the journey towards a digital future for the maritime industry must be taken by senior executives, the final webinar heard. Wärtsilä Marine's Business Development Director, Mauro Sacchi, urged executives to focus "on the business opportunity itself rather than on the technology [and] concentrate on their knowledge of the business."

The initial decision must be to understand the main trends in external trade and shipping, and to create a robust business model. Only then should digital solutions be brought in as a tool to support, enhance and improve the business. Data is information that leads to intelligence, to decision-making, and to improvement.

The move towards closer collaboration between technology companies and vessel owners and operators goes hand-in-hand with digitalisation, however it won't be an easy process. "We are moving towards a collaboration model that shipping has not been used to," one speaker said. "Technology providers must help businesses to look at the industry afresh and to make solutions available to them." The process should start with the industry itself.

While larger and better-resourced businesses have been able to take the lead in adopting digital solutions, there's a good prospect for agile smaller and medium-sized businesses seizing niche opportunities that larger corporations miss. And the human element will be critical to the success of digital solutions. Businesses will have to integrate re-skilled employees with experts from outside the industry who are keeping up with what's happening outside shipping.

The next step will see a shift from shipping companies buying in digital solutions to technology businesses deepening their understanding of maritime business models to provide the most useful solutions.

Owners of cargo and charterers of ships are embracing digitalisation much more rapidly than owners and operators of ships. This will push the latter to invest much more in digitalisation.



"Executives in future will need to master the opportunities offered by digitalisation to change commercial practices, rethink the way partners co-operate, and recraft the business model. The drive to secure positive revenue should be the impetus for change, not technology"

Mauro Sacchi

Business Development Director,
Wärtsilä Marine

Conclusions

- The last time shipping experienced a systemic disruption was in the mid-1960s when containerisation changed the way the logistics sector worked – and with it the maritime sector. Shipping needs to embrace another disruption: this time the driver is not only efficiency but also sustainability.
- Although shipping rarely appears to be ready for change, executives who prepare by keeping their businesses agile, tuned in to internal and external trends, and engaged with technological evolution will thrive. They understand that digitalisation is a tool to be used rather than to be feared.
- Taking cyber security into consideration now and when implementing digital solutions is critical. Engaging with a trusted advisor on this to build the strategy will reduce the potential risks.
- Shipping will be required to optimise its business model to take advantage of new opportunities, whether through economies of scale or consolidation. Digital solutions will enable that optimisation.
- Most maritime leaders are aware of the benefits of digital solutions to tackle their business challenges, especially in the areas of data management, operations and security; however instead of worrying about the technology, they should focus on the business opportunity itself and on their knowledge of the business.
- The main barriers to investing in digital solutions are integrating new technology with existing equipment, a shortage of skills, uncertainty about which system to choose, security concerns and payback time.
- The key decisions are what the technology will be used for rather than on which technology will be used.
- Although larger and better-resourced businesses have been early adopters of the new technology, there's still room for smaller, more agile businesses to seize niche opportunities.
- Collaboration won't only be between shipping companies, it will also see technology companies working closely with ship owners and operators, charterers and shippers to deliver digital solutions for all.
- Digitalisation can be a gamechanger for shipping companies brave enough to make the effort to make it work for them.
- Much of the data needed to make improvements is already being collected – it's the analysing and creating actionable insight that is missing.

