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Decarbonization and efficiency: the potential of digital fleet management

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Never more so than during the Covid-19 pandemic, technology has shown its potential to avoid or minimise business disruption to the maritime industry. Digitalization is playing a key role in being resilient and efficient, while remotization is the new normality in everyday work. Being able to transfer such technologies to the shipping sector and use them to take data driven decisions, enhance regulatory compliance and monitor the asset life cycle can give to owners and shipping companies real advantages in facing the new challenges the business faces.

In the actual and near future, one of the major challenges that the marine sector must face is represented by the global decarbonization targets, which will impose strong changes to the whole shipping sector. Due to these ambitious targets, in the next future every shipping company will be forced to work on three main pillars: new fuels, new technologies and optimized operational measures.

Fleet performance management and digitalization can play a key role in the optimization of the operational measures: monitoring efficiency, ensuring compliance with the upcoming regulations and optimizing reporting operations thus reducing the burden on-board.
With the upcoming regulations, it will become even more important to always know how a vessel is performing, being capable of simulating the ship's behavior in different operational conditions and reduce the carbon footprint by deploying the whole fleet in the most efficient way. When the vessels emissions need to be reduced as much as possible, the focus should also be on how to collect the information on board, ensure that the information is reliable and have tools to manage such data to enhance decision making together with proving efficiency gains after new technologies application.

This paper explains the importance of data collection and how digital tools are starting to permeate the life of the shipping companies, helping both onboard and ashore personnel in enhancing operations: from electronic logbooks to live monitoring of scrubber systems, from collecting data on board to building the hydrodynamic digital twin of the vessel to be used in weather routing applications.

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