

Press Release

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Digital Transformation in Shipping Operations - From planned to predictive maintenance

Transitioning to a predictive maintenance framework requires a holistic approach and a corporate culture shift which embraces collaboration amongst departments, people upskilling, technology, data analytics and processes' redesign.

PwC Greece addressed the important issue of digital transformation in shipping operations by presenting its insights during an online event titled “Digital Transformation in Shipping Operations. From Planned to Predictive Maintenance - A digital transformation framework for vessels” organised on 19 November 2020. The event was attended by shipowners, COOs, CFOs, Heads of Procurement and Heads of Technical departments of shipping companies who were updated on digital transformation trends in shipping operations and the benefits of adopting a digital transformation framework for a successful transitioning towards predictive maintenance.

Over the last years, shipping companies are increasingly facing the impact of a fast-changing competitive environment due to digital transformation. External factors such as regulations, cyber security threats and fluctuating TCEs have been dictating the pace of digital adoption and push shipping companies to adopt technology to date. Digitalization in shipping is still treated on an ad-hoc use-case basis, lacking a holistic strategy for digital transformation. However, advances in technology and availability of data is now allowing companies to transition down the digitization path more quickly.

Recent surveys have revealed that there is sufficient untapped potential from shipping digitization in the area of core operations that accounts for a current global OPEX spend estimated at \$100bn with a continuously increasing tendency. In fact, maintenance related

activities could constitute up to 20%-30% of the OPEX spend, thus having the potential to yield significant benefits from digitalization. Due to the varying degree of their digital maturity, shipping companies may need to take a more tailormade approach when they start transforming their operations by incorporating the digital aspect in their processes to reduce OPEX costs.

Technical departments can apply various strategies for controlling their maintenance costs, and the adoption of advanced maintenance capabilities can lead to significant qualitative and quantitative benefits, like higher equipment efficiencies, improved delivery times, less firefighting, decreased acquisition and forwarding costs, improved onboard and offshore workload and lower acquisition costs via volume discounts.

In this context, and to ensure the highest degree of business continuity coupled with optimum containment of maintenance associated costs, PwC experts suggest the deployment of a 4-phased predictive maintenance framework to promptly schedule corrective maintenance tasks via proactive equipment analysis. The suggested framework evolves through the following 4 phases:

1. Addressing key challenges in the current operating model and structure.
2. Redesigning the maintenance operating model to enable cross-functional collaboration for equipment focus.
3. Deployment and use of advanced analytics of available data from multiple sources, taking into consideration different categories of vessels, equipment, suppliers and maintenance activities, in order to predict demand and facilitate decision making.
4. Continuous improvement of the model via telemetry and the use of real-time data that continuously improve the accuracy of the predictive models via machine learning.

This 4 phased transition requires the adoption of a holistic approach which may involve revisiting core business elements such as the organisation structure, the collaboration between critical departments, information sharing, processes, data analytics, people reskilling and upskilling and performance management.

The benefits derived from implementing such a framework are multiple. Cost wise, it may play an important role in decreasing acquisition costs due to volume discounts, in reducing overall supply chain costs like forwarding and inventory, and also in improving bunkering consumption which in turn will yield improvements in CO2 emissions and contribute to ESG goals. Apart from these tangible benefits, there are additional intangible ones such as the reduced administrative workload, the increased crew wellbeing due to improved vessel-shore link, and the increased visibility and information sharing leading to better decision making.



Thanasis Spanos, Director, Digital Operations Transformation Consulting of PwC Greece commented: "Traditionally, the shipping industry has been slow in adopting new technologies or embedding them in its core operations. It has been proven, though, that digitalization can yield significant cost savings and additional intangible benefits for the shipping companies that embrace them. When it comes to maintenance costs, the approach currently implemented by the majority of shipping companies is a combination of a planned and a corrective system, whereas our experience shows that they should now be considering traversing to more predictive based concepts with the help of technology, data analytics and telemetry. This approach would eventually lead them to more effective operating models and real cost savings along the supply chain".

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