Increased voyage profitability and sustainability through dynamic Voyage Optimization

Why Nautilus?

The client was looking for a solution that empowers them to improve the collaboration with the vessel owner and share actionable insights with relevant stakeholders. The bulk operator identified Nautilus as their partner in fleet optimization with a tool that outputs dynamic operating instructions that adapt to changing environments such as weather, sea state, or market rates while underway. Nautilus's machine learning-based performance models and accurate predictive decision support tool empower the client to achieve maximum vessel efficiency and reduced greenhouse gas emissions.

144MT

Fuel Savings

$56k

Profit Uplift

448MT

CO_2 Emissions Savings

A bulk operator leveraged Nautilus Voyage Optimization to receive optimal operating recommendations, resulting in over $56,000 savings and reduced CO_2 emissions by 448MT on a single voyage of 29 days from Australia to Asia. The client's objective was to reduce fuel consumption and emissions, and to maximize net profit while adhering to ETA requirements.

Emissions savings of 448MT CO_2 in 29 days—on one single vessel

The bulk carrier travelled from Australia to Asia while receiving daily operating instructions, sent to both the vessel's crew and shoreside team. Nautilus's recommendations take into account machine learning-based performance models, market rates, daily hire costs, weather forecasts, and sea state conditions.

On this voyage, Nautilus recommended reducing the shaft speed to maximize overall voyage profitability, and also ensuring the vessel reaches destination at times where pilots were available. Even though the vessel expenses were slightly higher due to longer operating hours, the bulk operator benefitted from fuel savings and was able to save $56,000. Due to the lower shaft speed instruction, the client saved 114MT of fuel and 448MT of CO_2 emissions on a single voyage of 29 days.

Based on average sailing days, the client could take this voyage 12 times a year, resulting in 1,368MT of fuel savings and 5,376MT of CO_2 emissions savings—equivalent to taking 1,169 cars off the road in the same time period. By relying on data, technology, and actionable insights, the client was able to increase voyage economics while reducing their carbon footprint.

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Predictive analytics and increased collaboration

Nautilus Platform uses high frequency sensor data to build vessel performance models that can be normalized for environmental impacts while taking into account all meteorological and oceanographic conditions and predicting their impact on vessel performance, as well as market rates, and routes. As a dynamic solution that captures the full commercial picture, Nautilus Voyage Optimization updates operating recommendations as values change along the way to ensure maximum efficiency. Nautilus powers decision-making based on real-time data and actionable recommendations to maximize profitability and reduce fuel consumption. As a single source of truth, the Platform connects all stakeholders, enabling them to receive and share insights, empowering collaboration, transparency, and accountability between vessel owners and operators. For more information, download our white paper on Voyage Optimization.
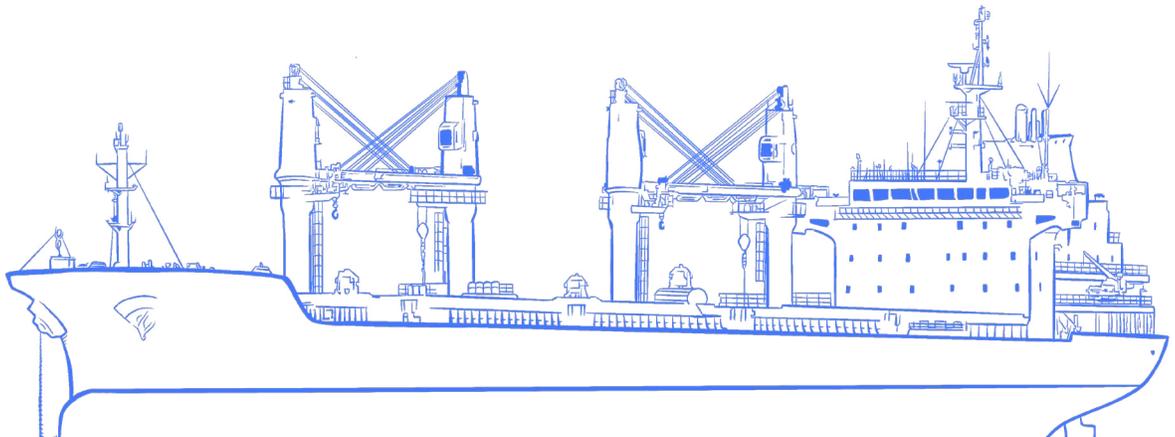
Nautilus Labs is advancing the efficiency of ocean commerce through artificial intelligence. With hubs in New York, Singapore, and Paris, the firm is trusted by clients across the globe to help make better, real-time decisions that ultimately unlock transformative outcomes—at sea and on shore. By partnering with Nautilus, ocean shipping leaders can maximize returns for every vessel and voyage while driving cross-team collaboration, greater transparency, and stronger accountability for their companies, shareholders, and the planet we all share.