



Business challenge

XShip Inc.'s role in the marine industry is to plan cost-effective voyages and bunkering, but without sufficient weather data, accurately predicting fuel costs proved difficult.

Transformation

As a leading marine consultant, XShip needed to remain ahead of its competitors. The vessel management company looked to The Weather Company, an IBM Business, for its accuracy and predictability in providing up-to-date weather data for optimal route planning, allowing for drastic savings in fuel consumption and fleet management.

Results

USD 4 million in estimated fuel savings

and on track to reach USD 20 million in savings after complete implementation

Customizable dashboards

based on the individual customer's needs, location and fleet size

Accurately predicts weather

to help calculate fuel consumption for future voyages and bunkers

XShip Inc.

How AI is helping the shipping industry weather the storm of high fuel costs

XShip, a marine consulting company based out of Cochin, India, is made up of a young team of naval architects, engineers, data analysts and software developers. The firm provides shipping companies with an extensive collection of online tools that cover the life cycle of a vessel—from design, construction and operation until the end of service. XShip currently manages 250 shipping vessels a day.

“Without being able to forecast the weather days out and selecting the most optimal routes, the vessel may not reach the port on time. If delayed, regardless of weather, there is a huge fine.”

—Syam Krishnan, Senior Manager of Performance and Analytics, XShip Inc.

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Navigating the high seas blind

Maritime transport has been around for centuries and accounts for 90 percent of the world's trade, and it is, by far, the most cost-effective way to move goods en masse all around the world. Nevertheless, the shipping industry is always looking to improve vessel management and performance while finding the most efficient and optimal ways to cut excessive fuel costs.

XShip is no different. As a leader in marine consulting, the company provides maritime customers with online design and analytics tools for vessel performance monitoring and emission control. But the company, which manages 250 ships a day, was lacking a way to effectively plan fuel costs for future voyages using previously documented analytics.

Syam Krishnan, Senior Manager of Performance and Analytics at XShip, explains: "There was uncertainty when it came to ships' weather reporting, which is used to calculate fuel savings to model for future voyages."

Weather conditions significantly impact a vessel's voyage and affect its speed, cargo, and route—and its fuel efficiency. Predicting weather entails tracking wind direction, ocean currents, temperatures and more. Working with inaccurate forecast data made it tough to determine optimal shipping routes for voyages.

Though a vessel can report weather conditions, there is always uncertainty with ship readings. The static data can be ineffective for accurately predicting weather days to weeks out.

"If a vessel has to travel from one port to another, there may be several routes available and several weather patterns to determine. We needed a reliable feature to help us decide which route to go," Krishnan says. "Fuel has to be consumed to the minimum, and without the proper algorithm, we cannot plan these optimal routes or bunkers."

Preparing for the unplanned

With fuel consumption heavily encompassing more than 60 percent of overall shipping costs, XShip needed to find a more efficient way to save its marine customers large sums of money.

"There are many factors which we have to consider when doing our modeling for fuel consumption or when we calculate fuel savings," Krishnan explains. "One important factor is weather conditions, while the other factors can be provided directly from the vessel itself."

XShip chose to update the company's platform by way of The Weather Company's Enhanced Forecast Weather Data Package. This API features AI technology from IBM and marine forecast data from the

European Centre for Medium-Range Weather Forecasts (ECMWF) as well as inputs from other forecast models. From there, XShip and The Weather Company built out tool-heavy dashboards and integrated real-time weather data into the existing analytics platform to enhance overall vessel management and performance for XShip's marine customers.

"It's very important to get a high frequency of weather data. With The Weather Company, we are able to get fresh data at three-hour intervals," adds Krishnan.

The future of vessel performance management

The Enhanced Forecast Weather Data Package was the perfect fit as XShip was able to optimize fuel savings for its customers. The Weather Company assisted the maritime consulting company by providing accurate weather data, allowing XShip to improve the integrity of its fuel calculator, overall customer fuel savings, route optimization and charter party analysis.

"A major forecast for what we are doing is how to make the ship operations smooth and how we can get multiple savings every day by implementing weather data analytics, using new technologies and by controlling the operational parameters," Krishnan adds.

The overall fuel savings are significant: XShip, which manages 250 vessels that each consume on average 25 tons of fuel every day, is on track to save its customers roughly USD 20 million a year, once the final stages of implementation are complete.

"There are many modifications we can do with the weather data throughout our analysis process now that we couldn't before," Krishnan continues. "Whether it's with the historical data, forecast data or the current data, what we are forecasting now is enhancing our routes and saving 3 percent on fuel per voyage."

XShip continues to update and improve the modules with additional add-ons while remaining dedicated to helping shipping companies reap maximum benefits from its data-driven energy management platform.

"Every day, based on weather forecasts, every detail is updating our fuel calculations for each vessel. The accurate wind and wave data will improve predictions more and will be useful for the actual mariners on board."

—Syam Krishnan, Senior Manager of Performance and Analytics, XShip Inc.

“We continue to work with our customers to improve ship performance, which is directly linked to fuel savings, and The Weather Company is greatly helping us do that.”

—Sandith Thandasherry,
CEO, XShip Inc.

Solution component

- The Weather Company's Enhanced Forecast Weather Data Package

Take the next step

To learn more about the IBM solution featured in this story, please contact your IBM representative or IBM Business Partner.

About The Weather Company

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