

(No longer) lost in the mist

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For decades, voyage optimization in shipping has largely revolved around a familiar set of priorities: finding the safest route, minimizing bunker consumption, and ensuring vessels arrive on schedule. While those fundamentals remain critical, the economics behind modern shipping have become significantly more complex. Consequently, static voyage planning increasingly erodes profitability and operational flexibility. The knotwork of routing decisions concurrently demands market awareness and actionable data insights. To improve competitiveness, efficiency, and sustainability, today's shipping turns its attention to integrated voyage intelligence.

Nowadays, a crossing is no longer shaped only by weather systems and the distance traveled. Fuel price volatility, port congestion, emissions costs, charter party obligations, and fluctuating freight markets are now directly influencing the profitability of every voyage decision. In this environment, operational efficiency alone is no longer enough. What increasingly separates strong commercial performance from missed opportunity is real-time commercial visibility.

The challenge for ship operators is that many voyage decisions are still made without a fully integrated view of the commercial consequences behind them. Routing, speed adjustments, arrival timing, and bunkering strategies are often optimized independently rather than as part of a broader commercial framework. As a result, value is frequently left on the table.

The end of 'distance-based' optimization

Traditionally, voyage planning has been heavily focused on finding the shortest or most fuel-efficient route, which, just to note, does not always translate into the most commercially advantageous. A vessel taking the shortest route through adverse weather may encounter heavy seas, hence incurring increased fuel burn, speed loss, and delays that ultimately increase total voyage costs. Conversely, a slightly longer route with more favorable weather conditions may deliver lower overall bunker consumption, improved schedule reliability, and reduced operational risk.

Similarly, minimizing speed to reduce fuel use may appear economically sensible in isolation, but if it results in a missed laycan window or delayed cargo delivery, the financial consequences can quickly outweigh the savings achieved at sea. Every routing decision involves

commercial trade-offs. The key is to understand them or, better still, do it in real time.

Volatility is changing voyage economics

Shipping has always been cyclical, but the pace and intensity of market volatility have accelerated in recent years. Fuel prices can fluctuate sharply within days. Port congestion patterns shift rapidly across regions. Carbon pricing mechanisms and emissions regulations are introducing entirely new cost variables into voyage planning. Meanwhile, customers are demanding greater schedule reliability and transparency across supply chains that remain vulnerable to disruption.

This means voyage economics are no longer static from departure to arrival. A route or speed profile that looked commercially optimal at the start of a voyage may become significantly less efficient as market conditions evolve. For operators, this creates a growing need for dynamic decision-making supported by continuous access to operational and commercial data.

The hidden costs of poor visibility

One of the biggest risks in modern voyage management is not necessarily poor decision-making but an incomplete one. Consider a vessel arriving too early at a congested port. While the routing itself may have been fuel-efficient, the ship may now spend 24 to 48 hours waiting at anchorage. The result is increased emissions, wasted time, additional fuel consumption, and lost schedule flexibility for subsequent voyages. In another scenario, a vessel may slow-steam to reduce fuel costs, only to encounter worsening weather conditions later in the voyage that increase speed loss and compromise arrival commitments.

Similarly, bunker procurement decisions made without visibility into regional fuel price developments can unnecessarily increase operating costs. The same applies to canal transit choices, where the cheapest or shortest option may not deliver the best commercial outcome once delays, congestion, or schedule impacts are considered.

These examples highlight a growing industry reality: optimizing one variable in isolation can unintentionally create costs elsewhere in the voyage.

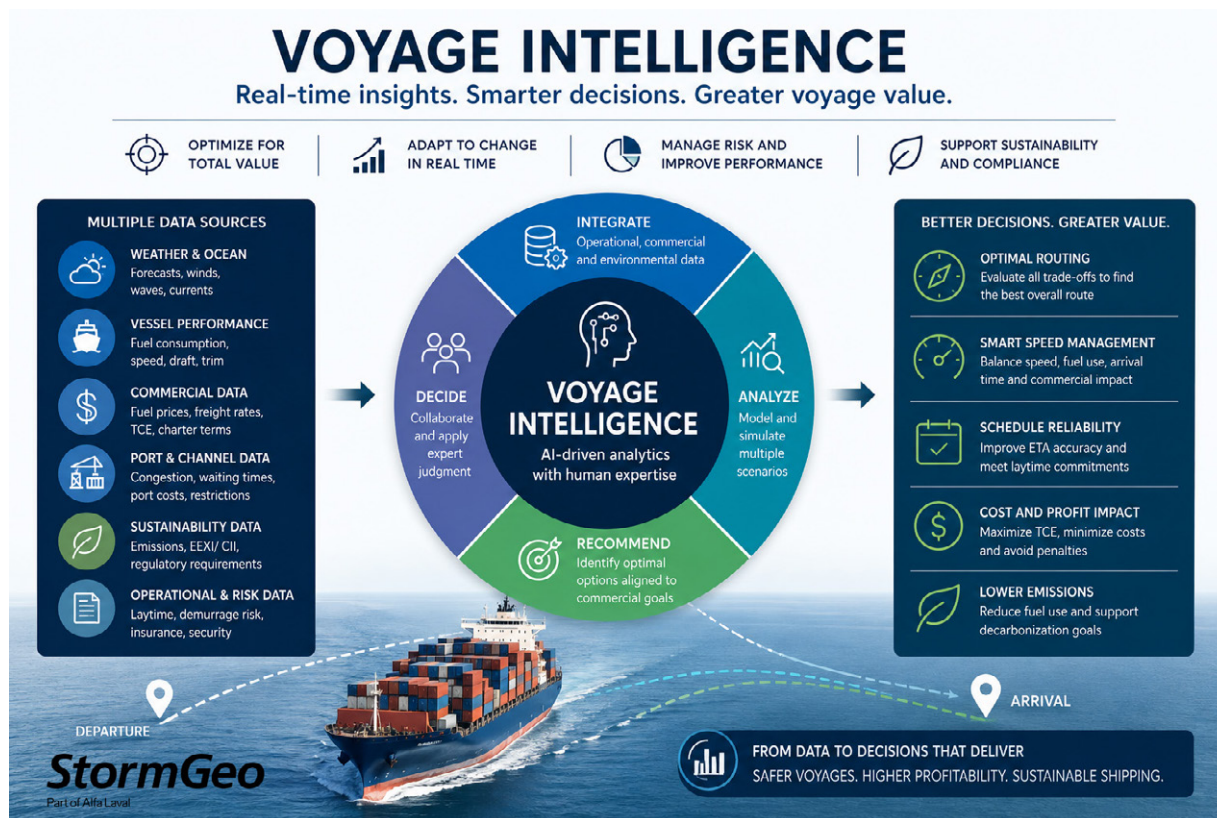
Commercial = operational

Historically, there has often been a separation between commercial and operational teams within shipping organizations. Chartering departments focus on contracts, freight exposure, and voyage profitability, while ship operators focus on routing, weather, and execution. But the increasing complexity of voyage economics means those disciplines can no longer operate independently.

Routing decisions now influence fuel exposure, emissions costs, demurrage risk, berth availability, schedule reliability, and ultimately voyage profitability. As a result, operational decision-making is becoming increasingly commercial in nature.

Leading operators are beginning to adopt a more integrated approach where weather intelligence, vessel performance data, commercial parameters, and sustainability metrics are combined into a single decision-making framework. This is where the concept of voyage intelligence is gaining traction across the industry.

The next evolution of voyage optimization is not simply about improving routes. It is about understanding the total economic impact of every operational decision made



during a voyage. Modern voyage intelligence platforms combine real-time weather and ocean forecasts, vessel performance modeling, ETA prediction, fuel consumption analysis, emissions monitoring, commercial voyage data, and VMS integration. The goal is not merely to identify the fastest or shortest route, but one that delivers the greatest overall value under current market conditions.

This allows operators to evaluate multiple voyage scenarios dynamically and make informed decisions based on changing economics during the voyage itself. For example, if port congestion worsens while a vessel is underway, speed and routing decisions can be adjusted to align arrival with berth availability. If fuel prices shift significantly between seaports, bunkering strategies can be adapted accordingly. If emission costs increase on certain routes, alternative operational profiles can be considered. In this sense, voyage planning becomes a continuous optimization process rather than a fixed plan established before departure.

Just-in-time arrivals and smarter port calls

One area where real-time commercial visibility is becoming especially important is port arrival management. Across the industry, there is growing recognition that vessels arriving too early at seaports contribute significantly to congestion, emissions, and inefficiency. This has sped up interest in

just-in-time arrival frameworks, where ships adjust speed during the voyage to synchronize arrival with berth readiness or for canal transit booking times. Achieving this effectively requires highly accurate ETA forecasting combined with real-time collaboration between vessels, operators, and ports.

The commercial benefits can be substantial in terms of reduced fuel consumption, lower emissions, minimized anchorage waiting time, improved schedule reliability, and reduced demurrage exposure. In many cases, slowing down strategically can create greater overall commercial efficiency than arriving at maximum speed only to wait offshore.

Competitive advantage through decision intelligence

The shipping companies best positioned for the future are likely to be those capable of combining operational expertise with commercial intelligence in real time.

As digitalization accelerates, access to data alone is no longer the competitive differentiator. The real value lies in turning data sets into commercially informed decisions.

This requires greater visibility across the full voyage ecosystem: vessel performance, weather risk, market conditions, emissions exposure, port operations, and contractual obligations. Companies connecting these factors effectively will better manage volatility, protect margins, improve efficiency, and support decarbonization goals simultaneously.

A more dynamic future

The shipping industry is entering a period where adaptability may become as important as efficiency itself. Static voyage plans are increasingly difficult to justify in markets shaped by rapid operational and economic change. Instead, voyage management is becoming more dynamic, predictive, and commercially aware. The most successful operators will not necessarily be those sailing the shortest routes, but those making the smartest decisions as conditions evolve.

In modern shipping, real-time commercial visibility is no longer simply an operational advantage; it's becoming a strategic requirement for capturing value in an increasingly volatile and data-driven industry. ■

StormGeo

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