ISSUE FOUR 2010

SHIPPING & MARINE
THE MAGAZINE FOR MARITIME MANAGEMENT

Keeping the fleet afloat
The dynamic, fluctuating world of shipping requires sophisticated solutions that turn complexity into clarity.

VITAL DATA
A new fuel and engine monitoring system provides recorded engine data allowing staff to make more informed decisions.

KEEP IN TOUCH
How satellite communications are providing essential support to the maritime industry.

BATTERIES INCLUDED
Advanced Li-ion battery technology offers interesting possibilities for cost effective marine propulsion and auxiliary systems.
The shipping industry is already regarded as one of the most efficient means of transporting heavy goods. However, there is always room for improvement, and this issue highlights just a few of the many innovations that are being launched into the sector. These include complex IT platforms, technology designed to reduce emissions and fuel use, environmentally friendly techniques for paint stripping, improved communications technology, new battery developments and even a foul release paint that can deliver cost savings. As Michael Lolk Larsen highlights in this issue’s cover story “shipping and vessel operations are not a straightforward business.” Thankfully there are lots of companies out there helping the sector to move forward whilst continuously improving operations.
Forget air miles – approximately 90 per cent of the world’s bulk traded goods are transported by sea, making shipping the lifeblood of the global economy. The United Nations Conference on Trade and Development (UNCTAD) estimates that in 2008 the shipping industry transported more than 7.7 thousand million tons of cargo.

Advances in technology have made shipping the most fuel-efficient and carbon-friendly form of commercial transport available. And all current trends and trading patterns indicate that an even greater proportion of the world’s trade will be carried out by sea in the future. Without shipping, the transport of crude oil, coal, iron ore and raw materials, including feedstocks and metals, would simply not be possible. Intercontinental trade in affordable food and manufactured goods would cease to exist in all but the most niche and exclusive areas. International supply networks would break down.

But with approximately 50,000 merchant ships traversing international trading routes, the freight market can be summed up in two words: volatile and complex. Ship owners, operators and charterers have to navigate an intricate, multi-faceted and inter-dependent freight market and are at the mercy of hundreds of events that can impact the cost of transport – and hence profit margins – every day.

The prevalence of piracy off the Somali coast and in the Gulf of Aden is perhaps the most obvious and has caused shippers either to pay exorbitant war risk insurance premiums, or to re-route and add delays and extra fuel costs to the journey. UNCTAD’s 2009 Review of Maritime Transport found that, based on 2007 data, re-routing 33 per cent of cargo from the Suez Canal to the Cape of Good Hope because of piracy concerns would cost ship owners an additional $7.5 billion per annum.1 These costs will ultimately be passed on to consumers.

It’s not just piracy that causes problems. Even if traffic through the Suez Canal were to be re-routed, other key shipping ‘choke’ points remain. Congestion in the world’s strategic shipping lanes, such as the Panama Canal, the Bosphorus, the Straits of Hormuz and Malacca, as well as the Suez, can cause significant delays and add costs to journeys.2

But even with a safe route planned out, other challenges inherent to the shipping industry remain to confound its participants and their profit margins. Seasonal differences, whether it is iced up ports, swollen river levels, or the size of harvest, have to...
The ability to manipulate up-to-the-minute data ensures that estimates for voyage time, route distances, and bunker fuel are accurate.

Equally hard to predict is price volatility for bunker fuel – which accounts for at least 25 per cent of the cost of running a vessel. What participants in the shipping industry do know is that climate change restrictions are coming into force. The cost of ships’ fuel is expected to increase by a further 50 per cent as result of the increased use of low-sulfur distillate fuel that will follow the implementation of the new IMO rules (MARPOL Annex VI). These will reduce the allowable sulfur content to just 0.1 per cent in 2015, down from the 1.5 per cent permitted today in prescribed Emission Control Areas (ECAs) – currently the Baltic Sea, North Sea, and certain shipping lanes around the US and Canada. Outside these ECAs, shippers are obliged to reduce the sulfur content of fuel from 4.5 per cent to 0.5 per cent. The IMO rules therefore add to the complexity involved in planning routes effectively, ensuring the right ships make the right journeys and optimising fuel consumption.

Then there is the size of the available fleet that has to be borne in mind: too few or too many vessels directly affects prices, which in turn affects freight rates. And finally, trading finance and credit conditions can positively or negatively affect both investment spending and consumer activity.

Managing all these elements – and many more – is critical for successful shipping operations, particularly as prices of fuel, commodities, cargo, credit and vessel hire continue to fluctuate once a ship has embarked on its journey.

This is why ship owners, operators and charterers rely on an optimised ship plan that helps them minimise these risks associated with vessel operations. But in today’s complex market, creating just such an effective ship plan is beyond the ability of a chartering and operations department that is meeting weekly and using spreadsheets to manually match open vessels with potential cargos.

This approach is as narrow and stovepiped as a ship’s chimney. It is slow, unwieldy and unresponsive: it can only anticipate the voyage at hand, and not very well at that. It also omits critical data and ignores the interrelated nature of challenges faced by shippers. Attempting to develop a comprehensive and optimised ship plan solely

be taken into account, for example. But even these fluctuations in weather and climate provide a more predictable framework of operations compared to demand for commodities, which can change rapidly in response to the ebb and flow of the global economy and industrial production in specific countries.


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Instead this dynamic, fluctuating world requires sophisticated solutions that turn complexity into clarity and volatility into profit. Spreadsheets, manual systems, month-old data – all of it is obsolete in today’s environment. Like all risk management operations, shippers need a real-time system that offers them complete visibility across all freight operations and that can turn vast amounts of static shipping data into actionable information that supports proactive decision-making and improved bottom-line results.

For example, with an intelligent, dynamic system shippers can make scheduling as efficient as possible, reducing partial loads on any given route, and optimising the established port schedule to minimise ballast and waiting time. Ships can be better positioned for their next journey after discharging to eliminate empty, and thus profitless, journeys. Owners and charterers can easily incorporate information on vessel availability, type and draft restrictions, and keep track of day-to-day operations, arrivals, departures, loading, discharging, bunkering and disbursement accounting in order to maintain up-to-date, real-time voyage information – without having to delve through six separate databases to do so.

Equally, by creating an accurate report on available vessels and cargo commitments beyond one journey out, such a system can support shipping planners in creating far more accurate schedules for forthcoming journeys. If shippers have a full view of upcoming cargo commitments and open tonnage positions by vessel, port location and date they can make more efficient matches between vessels and cargo. Most importantly, these kinds of functions can help shippers assess the potential profit or loss of a given journey before making an agreement to transport cargo.

What’s more, a dynamic system can integrate information from pilots and captains as the vessel starts on its journey. If unexpected bad weather or adverse currents delay a journey, that information can be incorporated into existing ship plans. The ability to manipulate up-to-the-minute data ensures that estimates for voyage time, route distances, and bunker fuel are accurate – so mitigating the extensive costs as well as the possibility of unnecessary demurrage costs, missed laycans and even lost business.

An effective platform for managing vessel operations and providing shipping intelligence will give each organisation an enterprise-level view

of freight operations as well as offering them the ability to drill down into granular detail on specific aspects of their operations. It will enable them to plan multiple journeys simultaneously across a set of vessels or cargo, aware of the interdependencies between them; plan spot or contract cargo voyages; and slice and dice planning by vessels, cargos, ports, lines of business and other characteristics of their choice. This is a level of functionality that is simply beyond the capability of a spreadsheet, however sophisticated its macros may be.

But most of all, a technology platform designed to manage the full range of complexities inherent in today’s shipping industry gives companies the ability to understand the impact of their decisions in terms of fleet utilisation and total freight profitability. They can assess the impact of alternative decisions and analyse ‘what-if’ scenarios to ensure maximum profits. They can establish where money is lost to idle days, bunker expenses, voyage delays and conversely where in their operations revenue can be generated.

That knowledge is the difference between securing an ongoing profit and gambling with the company’s future. Shipping and vessel operations are not a straightforward business. The waters are choppy and companies that cannot see and do not understand every aspect of their business will find navigation increasingly difficult.

Michael Lolk Larsen
Michael Lolk Larsen works at Triple Point Technology. Triple Point is the leading global provider of innovative software solutions to efficiently and profitably manage commodities and enterprise risk. Triple Point’s growing, loyal customer base of over 260 companies represent all industries with exposure to energy and raw materials including oil and gas, coal, metals, agriculture, transportation, shipping, consumer products (CP), discrete manufacturers, and big box retailers. The company was named a “Leader” in Gartner’s ETRM Magic Quadrant for its completeness of vision and ability to execute.

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