Collaboration in action

by Pekka Pakkanen, *Executive Vice President, NAPA Shipping Solutions*

Collaboration is rightfully hailed as the key ingredient to making maritime decarbonisation a reality, and this new mindset is gaining pace in shipping. Across the sector, companies have expressed their willingness to work together. Still, many ask where to start – and how. In other words, a clear framework is often missing to enable different stakeholders to join partnerships without hesitation – and with the confidence that collaborating will not jeopardise their own organisational goals.

From our experience in supporting partnerships in shipyards and at sea, it is clear that successful collaborations rely on flexible thinking and the willingness to explore new ways of working. We also know that digital tools are the backbone of successful collaborations, enabling information sharing, strengthening trust, and creating a fair playing field for everyone involved.

Sharing costs – and rewards

One example of decarbonisation collaboration in practice is the Blue Visby Solution. It sees the different stakeholders involved in a ship's voyage proactively agreeing to share some of the risks and benefits of the decarbonisation transition. The potential impact of such collaboration is meaningful: an average 15% reduction in greenhouse gas emissions across the dry bulk and tanker fleet, where the Blue Visby Solution was tested. The pioneering project partners show how the maritime sector can today reshape existing frameworks and remove some of the obstacles and inefficiencies that still stand in the way of emission reductions.

The Blue Visby Solution combines state-of-the-art digital technology and an innovative contractual framework to solve one of shipping's hardest-to-abate problems: sail fast, then wait. This phenomenon sees ships sailing at speed across oceans (increasing their emissions exponentially) only to anchor for extended periods outside congested ports.

The contractual framework underlying Blue Visby tackles the 'split incentives problem' by enabling the different stakeholders involved in a voyage (charterers, shipowners, and cargo owners) to share the expenses, risks, and rewards of using the Blue Visby Solution – including fuel savings, the costs of a lengthier journey, and the financial value of emission reductions where applicable. The aim is that no one loses out in the process.

The Blue Visby Consortium estimates that the Blue Visby Solution has the potential to reduce the carbon footprint of the global shipping fleet by approximately 60 million tonnes of CO_2 per year if it were applied worldwide across all shipping segments that the solution addresses – which is larger than the total emissions of an entire country like Norway.

The project is based on the maritime tradition of collaboration to overcome the industry's challenges. The inspiration for Blue Visby is the age-old general average practice, where the stakeholders in a vessel's voyage proportionally share the losses from the sacrifice of part of the ship or cargo to save the whole from peril. The climate emergency can be viewed as such a peril. It is not an emergency for just one ship but the entire maritime trade. By joining forces, we can help protect the planet.

Place in the queue

Cutting-edge digital technology is what takes Blue Visby from concept to reality. The solution is underpinned by NAPA's data and voyage optimisation expertise. It relies on high-tech algorithms to help optimise and stagger arrival times for vessel groups travelling to the same port.

The Blue Visby algorithm – taking into account various parameters (each vessel's performance and characteristics, port congestion at the destination, and weather conditions) – provides an optimal target arrival time for every vessel while keeping their order of arrival as if they had sailed independently without the solution. This enables ships to slow down, cutting fuel consumption and emissions, but still 'keep their place in the queue,' arriving one after the other, thus reducing unnecessary waiting times outside ports.

Crucial to the success of the Blue Visby platform is its commitment to remaining neutral, independent, and transparent by creating a robust and fair platform that all participating companies trust. It also addresses industry concerns about sharing sensitive information: the algorithms that assign a target arrival time to each vessel require publicly available automatic identification system data only. Furthermore, the anticipated 15% emission reduction from the liquid and dry bulk fleets will make a tangible difference to the environment without impacting commercial viability: the speed reduction would be as little as one knot on average.

Open to exploring

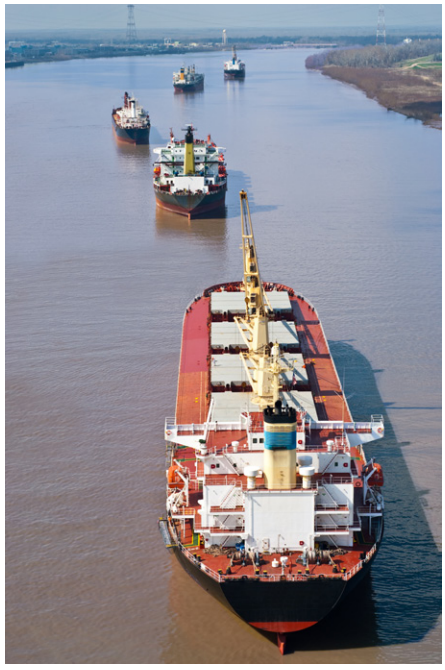
The Blue Visby case demonstrates some of the most important principles behind collaborating successfully. These include the importance of creating trust through shared knowledge and robust platforms and how new efficiencies can be discovered by all stakeholders being open to exploring new paradigms and ways of working. This is just one example of how data-powered collaboration can help accelerate maritime decarbonisation.

Such partnerships can begin at the drawing board – the crucial design phase – when a vessel is still a concept. The latest advances in information sharing are unlocking an unprecedented level of collaboration between designers, owners, sub-contractors, and classification societies through 3D models that enable them to work collaboratively on a 'single source of truth.' This is key to delivering the innovative designs demanded by the industry to reduce their carbon footprint. Technology is already enabling efficient real-time data sharing. Still, the intellectual property rights of each party must be protected, which calls for collaboration on the contractual frameworks between the stakeholders to unlock the benefits of today's technology.

In practice, intelligent 3D models produced with NAPA Designer, together with the web-based NAPA Viewer information sharing solution, enable engineers to test new approaches more easily, allowing for fast design changes and reliable analyses of how new features will work together



Photos: NAPA-Blue Visby Consortium





and impact the integrity, stability, and efficiency of the global structure. This helps all stakeholders explore new 'technological territories' together, such as designs incorporating new fuels and technologies. The aim is to also use these models for classification approvals, which will be a win-win situation for shipyards, owners and class, enhancing information sharing, saving time, and limiting error risk.

Never compromised

Successful collaborations also rely on all partners agreeing on common principles that will guide them throughout developing new solutions. One of them is that safety must be guaranteed. As the environmental and technological landscape evolves rapidly, innovation must go in tandem with digital tools that enable fast-paced innovation to be matched by the highest safety standards.

Whether alternative fuels, carbon capturing, navigational tech, or performance optimisation tools, new technologies impact a ship's safety profile. They must be implemented by considering parameters like ship stability and longitudinal strength. Vessel-specific digital models, together with cloud-based solutions, already play a key role, enabling crews on board and shoreside teams to collaborate on an unprecedented scale to ensure the safety and stability of daily operations.

In practice, our NAPA Stability solution supports the crew's critical decisions on deadweight management, optimising various parameters (fuel and water bunkering, hull and trim) to make voyages more efficient while maintaining vessel safety and stability. With cloud connection between ship and shore, fleet optimisation centres can better support seafarers on board with stability decisions and calculations. Safety has become a shared responsibility with real-time access to stability data at the shore.

Moving forward, data-powered models will continue to ensure that innovative vessels remain safe by enabling decision-making, implementation, and execution of new green technologies that ensure a ship's sustainable operations without ever compromising safety. These models also build trust based on reliable and comprehensive data, providing all partners with a 'safe framework' within which new decarbonisation measures can be implemented (including future fuels, wind propulsion systems, and weather routing).

No trade-off

Cultivating the industry's collaborative mindset is vital to explore new ways of working together, supported by the digital tools needed to make partnerships work. The reality is that there is no trade-off between individual and collective interests. Instead, effective cooperation is a win-win situation in which all partners improve their outcomes, gain clarity, future-proof their assets, and contribute to the greenhouse gas emission reductions Earth urgently needs. ■

In its over 30 years of operation, the Helsinki-headquartered NAPA has become a global leader in developing and scaling software, services and data analysis for a safer, smarter, and more sustainable maritime industry. To date, NAPA has 420 user organisations for its design solutions, nearly 3,000 installations onboard vessels, and a growing number of subscribers for its cloud-based fleet services. Make your way to **www.napa.fi** to see more.

BLUE VISBY SOLUTION

The Blue Visby Solution is a multilateral platform for reducing greenhouse gas emissions by about 15% through eradicating the 'sail fast, then wait' practice. In collaboration with the Consortium participants, we are conducting real-time pilot programs, aiming to launch in 2023. The Blue Visby Consortium is co-ordinated by Napa and Stephenson Harwood, leading experts in their respective fields of maritime technology and law. At **bluevisby.com** you can check more & get involved.