

Sustainable technology

Simon Johnson asks four executives how new technologies will help ferry operators to reduce their environmental impact

Sustainability now is a key priority for every ferry operator. That became patently clear during the roundtable I hosted with four industry executives at the farewell dinner of the 2019 Interferry Conference, which was held in the Painted Hall at London's Old Royal Naval College, a building of historic naval significance where Lord Nelson lay in state in 1806.

As we reflected on the conference theme of innovation, we exchanged our views on the industry's significant investment in R&D and innovation. Here, we discuss the varying degrees of success and how we believe

technology will play a significant role in improving sustainability. I wonder what Lord Nelson would have thought?

How does your business decide whether to implement new technology straightaway and hope the return outweighs the risk, or whether to wait for it to be proven and potentially miss out on the benefits?

Nicholas Belle, managing director of FlexIT: Corporate social responsibility is at the heart of our business strategy, processes and culture. If new emerging technology helps us fulfil



FRS uses IT solutions from FlexIT to make its operations more efficient

The panel:



NICHOLAS BELLE
Managing director of FlexIT, which manages IT for FRS



SIMON JOHNSON
Director of Shipshape Consulting



CHRISTOPHE MATHIEU
CEO of Brittany Ferries



WILCO VAN DER LINDEN
Business development director at Wärtsilä



PER WESTLING
Managing director of Stena RoRo



The five roundtable panellists pictured with CFR's executive editor Jon Ingleton (bottom row) in the Painted Hall at the Interferry Conference

these responsibilities, we can rationalise investing in it.

Christophe Mathieu, CEO of Brittany Ferries: Rather than asking what is the right technology, we must ask what can we do to achieve our goal of reducing the impact of our operations? LNG, for example, is a fossil fuel so it's not the zero-emissions solution we want in the long term. However, LNG is the best short- to medium-term solution for shipping. It lowers carbon dioxide emissions and is significantly better than diesel in terms of air quality, even compared to ships with scrubbers. That's why we've designed new ships like Honfleur, Salamanca and Santona to accommodate LNG, even with the current absence of adequate refuelling infrastructure in ports.

Wilco van der Linden, business development director at Wärtsilä: We strive to be technology-ready, and while it's hard to predict some societal, political, regulatory and economic developments, we know the price of fuel and emissions will steeply rise due to the environmental battle we're all fighting. Wärtsilä is deeply involved in R&D projects on technologies that will

be able to match the fuels of the future, the impact of artificial intelligence (AI) and data-driven transport operations. We can't be sure which developments will have the greatest impact, but we can't afford to wait for them to be proven.

Per Westling, managing director of Stena RoRo: Being a large operator with a high technical focus and willingness to invest in new technology, we have

“AI is a fundamental part of smart shipping, which will lead to more efficiencies”

Nicholas Belle, FlexIT

ROUNDTABLE

the resources to carefully evaluate new ideas and technologies before investing. The trick is to invest in what you believe are long-term solutions that will really make a difference, particularly to the global warming challenge. It's risky and expensive to be a pioneer, but we invest in R&D for solutions we believe in, such as batteries and fuel cells for certain ships and chemical methanol for combustion engines of all vessel types.

Which new technologies have over-delivered against expectations and which have fallen short?

Belle: Self-service and automated service solutions have by far over-delivered against expectations. Customers being able to decide when, where and how to do things is a game-changer. Unfortunately, recycling technology currently falls short of its potential to help reduce greenhouse gases and carbon dioxide emissions.

Mathieu: Onboard wi-fi is the perfect example of a technology that has done both. We expect wi-fi to work on demand, but it's difficult to deliver fast wi-fi on ferries because we rely on satellite-at-sea systems. In 2020, we're



“Being the greenest mode of transport must be our goal”

Christophe Matthieu, Brittany Ferries

trialling an innovative technology solution called Haut Débit, Longue Portée on Mont St Michel, which sails on the Channel between France and the UK. This would eliminate the need for satellites by using long-reach wi-fi transmitters located on either side of the Channel.

Van der Linden: All new technologies are introduced to serve a particular market and are improved over time. Some don't get developed as well as

others and some, such as the traditional two-stroke engines running on heavy fuel oil, are perfected but eventually become obsolete.

Westling: Very few technologies have over-delivered, simply because there have been insufficient incentives for people to develop them. However, systems to finance the R&D work that will drive progress are now being discussed. This is essential – I doubt that short-sea ferry operators would

have been able to develop LNG fuels and batteries as quickly without the significant support they got from the Norwegian NOx Fund.

Can you tell us which emerging technologies offer ferry operators the greatest potential to make significant efficiency gains?

Belle: AI is a fundamental part of smart shipping, which will lead to more efficiencies in voyage planning, fuel consumption, emissions control, predictive maintenance and partial and fully autonomous vessels.

Mathieu: Ammonia or hydrogen could be ideal zero-emission fuels, but the challenge will be to overcome well-to-wake carbon dioxide emissions. If you expend as much energy (and



Honfleur will be able to run on LNG fuel to help Brittany Ferries' lower its emissions

therefore carbon dioxide) to produce hydrogen, then you simply transfer the greenhouse gas problem. However, if you can produce hydrogen sustainably, by harnessing the power of wind or solar for example, then you have a viable zero emissions well-to-wake solution. It's an exciting prospect.

Van der Linden: On the hardware side, I'd say improved hydrodynamics, internal combustion engines with fuel flexibility, and energy storage systems. In terms of software, data science and AI technologies.

Westling: It depends on the type of ship and operational patterns, but in general, energy carriers without carbon molecules such as ammonia are very interesting, as are fuels produced by wind, solar energy and carbon capture and storage.

Is it foolhardy to believe that technology will help make ferries the greenest mode of transport? What other factors will be essential to achieving this goal?

Belle: Not at all. The maritime industry is already one of the most environmentally friendly travel sectors, second only to the automobile industry. Advances in technology will only further the maritime ambition. However, we must also change the mindset of customers and their perception of ferry travel.

Mathieu: No, being the greenest mode of transport must be our goal – we can't accept that other forms of transport will decarbonise and reduce their environmental footprint ahead of us. However, there's one essential factor that we need to achieve this

goal: the political will to force change. That doesn't mean regulation or costly trading schemes, but support for R&D and incentives like ecobonus to encourage the take-up of the latest technologies.

Van der Linden: Ferries will still play a big role in eco-friendly short-sea transport in future, but their shape and size will change. Automated and even autonomous ferries will emerge sooner rather than later, and just-in-time transport will be essential to keep our European economy healthy and competitive.

Westling: Ferries will always be an environmentally friendly way of moving people and freight compared to flying or using motorways. The only way we can become truly sustainable in future is to find new solutions through R&D. **C&F**