Shipping is in the midst of a major transformation, one that is arguably greater than it has seen before. Granted, many may cite the move from sail to steam, the dramatic oil crises of the 70s, containerisation, or the advent of the ISM code, as more seismic changes. However, the key difference between all of those examples and the situation we are in today is that the industry is having to respond to threats and developments that are not clear and not driven by regulation. In other words, there is a need to proactively change the way we do business, rather than reacting to changes forced upon us.

Perhaps for the first time in our history, regulations need to respond to what shipping is doing, rather than the other way around. The opportunity this gives us is both tremendous and unprecedented.

Tried and tested technologies
Digital developments that have taken other industries by storm over a decade ago are now ripe for the taking by the maritime industry – but at a greater scale than previously experienced. Many of these technologies have been tried and tested with good results in other applications and markets, offering efficiency gains that we simply cannot ignore. Additive manufacturing, better known as 3D printing, is one such example.

Author
Nakul Malhotra
Vice President Technical Solutions & Marketing, Marine Products, Wilhelmsen Ships Service
Perhaps for the first time in our history, regulations need to respond to what shipping is doing, rather than the other way around. The opportunity this gives us is both tremendous and unprecedented.
The non-critical, generic and unobtainable parts catalogue alone stretches into the thousands of parts and each one can represent savings of 10-50% per part if the value chain is re-examined.

Rethinking the value chain
Vessel and equipment parts being flown urgently from one remote location to the other is a daily reality for the operations and technical teams of all shipping companies. Whilst we have all found ways of dealing with this problem, 3D printing gives us the opportunity to rethink the entire value chain for this time consuming and often stressful task.

---

Nakul Malhotra

As Vice President Technical Solutions & Marketing, Marine Products for Wilhelmsen Ships Service (WSS), Nakul is instrumental in the ongoing execution of the company’s digitalisation strategy.

Supporting a renewed focus on customer co-creation and speed of execution for product development, along with customer experience innovations, such as augmented reality, IoT and many other technologies, Nakul is an advocate of the positive role that 3D printing, automation and robotics can play in operations.

Nakul combines a wealth of maritime sales, operations and management experience, with qualifications in marine engineering, and direct seafaring experience.
Rather than sending parts, what if we could send files?

Generally speaking, for most non-critical parts on board, the cost of carriage accounts for the majority of the total cost of the delivered part. 3D printing capability can open substantial savings on parts freight and offer constant availability.

In addition, most parts are designed for traditional manufacturing techniques, whereas 3D printing on demand optimises fabrication to ensure individual parts are manufactured with alternative internal structures and external finishes. This can open up efficiencies not experienced before.

Adapting the technology

What is critical of course is the need to respect Intellectual Property (IP) rights. It is important that we as an industry stand together to ensure that this technology does not become a back door to bypassing these rights. Working together with stakeholders is key. Nevertheless, the non-critical, generic and unobtainable parts catalogue alone stretches into the thousands of parts and each one can represent savings of 10-50% per part if the value chain is re-examined.

This is a new development for the maritime industry and every company needs to understand its own position and capability to potentially adopt this technology.

Moving forward

So how to start? There are several ways to access information and expertise. The Singapore Shipping Association has a Joint Industry Programme with MPA, DNV GL and the National Additive Manufacturing Innovation Cluster (NAMIC) investigating the application of 3D printing in the industry. In addition, we at Wilhelmsen, have been looking into 3D printing as a service to the industry and have set up our first micro factory in Singapore.

The ecosystem is being built up and together we can work towards being ever more competitive. By adopting this new technology we can work together with regulators to ensure that stakeholders are responding to these new opportunities in a proactive manner, and take our rightful place in the competition for the talent and expertise of tomorrow.