

# INDUSTRY 4.0

## NETWORK SITE VISITS

### Southern Spars

Southern Spars is a world leader in the manufacture of composite masts, booms and spreaders - used on everything from super yachts to America's Cup.

#### Business overview

The company has been in businesses for 29 years and employs more than 500 staff worldwide. Its operation, headquartered in Auckland, has centres in the USA, Denmark, Spain and Sri Lanka.

#### Background

This case study looks at how an organisation, such as Southern Spars, can progress their journey to Industry 4.0 by reviewing the technology and processes already implemented as part of Industry 3.0.

The implementation of new technology into a manufacturing process can be critical for maintaining or extending an advantage. Investing and deploying technology involves constant decision making based on specific knowledge of the technology and the problem being solved.

To remain cost competitive, when positioned on the other side of the world from their customer base, it was clear that Southern Spars needed to improve their workforce efficiency. With a traditional assembly process reliant on very experienced and skilled staff, the senior team decided to look at opportunities to automate parts of the process.

In 2010, a robotic arm was selected as the technology to be deployed to realise the above opportunity. When issues arose shortly after commissioning, the solution provider was willing to engage and provide resources and knowledge to the project to optimise the technology, which was

very helpful. In a "learning first" approach, however, a cross functional team, including the prospective solution provider, could have developed a series of activities to prove or disprove this capability prior to investment and derive alternative set ups.

The "learning first" approach reduces expensive and timely 'loopbacks' (ie returning to a previous stage later in the project, such as designing after implementation) which are a common feature of traditional "staged gate" approaches. The "learning first" approach would have provided a much better outcome for the organisation.

Solution providers are often used as a resource to assist in closing knowledge gaps, however where the providers themselves are unsure they must be willing to engage collaboratively with the client to develop the right offering. This shift to a 'partner' approach will be key to the success of solution providers in the future as more clients move to a "learning first" method for implementing technology.

Another knowledge gap that the Southern Spars team recognised in hindsight was in the technical set up of the equipment. An internal team tasked with optimising and broadening the capabilities of the technology were originally unfamiliar with all the technical requirements needed for the robot to be precise and machine effectively. Following commissioning, the team uncovered multiple limiting factors that they overcame through creative problem solving. >

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If a "learning first" approach had been taken this internal team could have been skilled up by visiting other sites with similar technology or attending necessary workshops. This would have shorted the commissioning time and again reduced loopbacks to redesigning elements of the solution after it had already been commissioned.

Ultimately the robotic arm delivered value to Southern Spars for a number of years despite the 'loopbacks' required to achieve this state. But it was determined due to strategic changes that the robot was no longer adding sufficient value and was removed a few years ago.

### Conclusion

A "learning first" approach aimed at reducing costly and time consuming 'loopbacks' delivers value in new product development. The principles can be effectively translated to technology deployment where a test first and fail fast philosophy contradict traditional "staged gate" methods, ultimately delivering a better likelihood of successful implementations hitting objectives first time.

### Key Learnings

In going through the Network Site Visit, there were several key learnings –

- Industry 4.0 is not just about robotics and AI. Nor is it about implementing technology solutions that cost a lot of money, or having to find staff with specific skills. It is about challenging the status quo and improving things like planning, processes, product design and strategy.
- As an example, one of the key findings from this site visit was that Southern Spars' planning processes were not as good as what the team had thought. This was ultimately holding them back in some areas – specifically around efficiencies.

- One of the outcomes from this site visit was to pull together a roadmap to start a more tangible digital strategy. As part of this, LMAC provided Southern Spars with examples of best practice from similar organisations and industries overseas as examples of what could be achieved.
- Jim's McColl, the General Manager NZ of Southern Spars, gave this advice to those attending a webinar about their site visit - "Be open minded about Industry 4.0 and have the courage just to get started so that you make sure that you don't get left behind". You can view a recording of this webinar at [www.ema.co.nz](http://www.ema.co.nz).

### About the site visits & Industry 4.0

The purpose of the Demonstration Network is to drive uptake of Industry 4.0 technologies among New Zealand manufacturers with the aim of increasing their productivity and global competitiveness. The Network of Site Visits (NSV) are part of the Industry 4.0 Demonstration Network, which also includes a mobile showcase and smart factory showing cutting-edge industry 4.0 technologies in action. The NSV takes selected companies through a fully-funded assessment process to help them accelerate their own journey towards Industry 4.0, and sees them share their knowledge with other manufacturers.

### Further questions?

To find out more please contact Michael Burgess at EMA or Frank Phillips at LMAC

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