

MARITIME EXTRA MAGAZINE

MAX

APRIL 2016

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FROM

DISRUPTION

TO

INNOVATION

TO

GROWTH



MARITIME INDUSTRY AUSTRALIA LTD

FROM DISRUPTION TO INNOVATION TO GROWTH

With the Federal Government recently announcing a \$1.1 billion dollar investment in innovation, we took the opportunity to talk to three maritime organisations who have based their business on innovation.

Processes and procedures underpin most maritime organisations predominantly to create a safe and predictable workplace. This focus naturally creates compliance, so in such a necessarily controlled environment how do maritime organisations manage innovation which embraces a tolerance for risk? As an industry, how can we capitalise on the \$1.1 billion spend that the federal government announced late last year?

It is recognised that new ideas drive increased productivity and profitability – you don’t see many of us riding a horse to work these days. And innovation, or a workplace culture that fosters innovation, is seen as vital to survival. This is documented in The Australian Innovation System Report 2015* which monitors and assesses the performance of the Australian innovation over time and in comparison to other nations. The 2015 report indicates that innovative businesses are:

- around 60 per cent more likely to report increases in income from sales and increased profitability
- four times more likely to increase the number of export markets targeted
- about twice as likely to increase productivity and employment
- around three times more likely to report increases in investment in training and IT expenditure
- around five times more likely to increase the range of goods and services offered

Yet, according to the report, only 16 per cent of Australian businesses have a high performance innovation culture.

The economist’s talk of **disruptive innovation**, a term defined by Clayton M. Christensen in 1995 explaining how an innovation starts initially in a simple application at the bottom of a market and then relentlessly moves up the market, eventually displacing established competitors.

When discussing innovation with Warwick Norman, CEO of Australian company RightShip, it becomes clear that it doesn’t just ‘happen’. The culture of innovation at RightShip has been developed and fostered throughout the life of the organisation. “Recruiting and retaining the right people is something we work hard at” says Norman. “New ideas are not usually ad-hoc or ‘lightbulb’ moments: we have regular forums where we encourage and develop new and sometimes left-field concepts. We make it clear that in terms of ideas, nothing is off the table.”

RightShip recently announced that their unique Greenhouse Gas (GHG) Emissions Rating was endorsed by 26 charterers who use the GHG Emissions Rating to find the more efficient vessels, thus prioritising efficiency and inciting change amongst shipowners. This represents one in every five vessels selected for charter, or 2 billion tonnes of goods shipped per annum: so significant proportions, and ground-breaking not only in terms of

volume, but in that the industry is taking sustainability initiatives into their own hands rather than waiting for top-down measures to be applied.

Norman says “this is good news for the environment, and it is good news for our customers as it supports their own corporate social responsibility policies whilst saving them money through a reduced bunker bill. It’s also good news for those shippers that invest in efficient vessels: with the continued oversupply of ships in the market, it is a form of natural selection as more efficient vessels are selected.”

Making the tool available to the wider market was also key in ensuring its relevance and acceptance. RightShip teamed with global not-for-profit The Carbon War Room to launch shippingefficiency.org, a free on-line platform that enables users to log in and access the GHG Rating to compare the relative efficiency of any vessel.

Looking to industry for relevant partnerships has also been a key ingredient in RightShip’s success. “Forging strong partnerships and seeking expertise from other organisations has provided us with additional skills and fresh perspectives. Organisations such as the Maritime Industry Australia Ltd (MIAL), The Carbon War Room, and academic institutions have added depth to our product development process.”

He adds “Working in an environment that supports innovation means also being prepared to fail. Having the belief



Warwick Norman, CEO of Australian company RightShip.



Warwick Norman receiving the Prime Minister’s Exporter of the Year Award from the Hon. Tony Abbott MP.

*The annual Australian Innovation System Report explores the impact of innovation and related activities on business, industry and national performance. The report also outlines challenges and future opportunities for Australian innovation. It is a publication from the Office of the Chief Economist. For further information go to www.industry.gov.au

“Working in an environment that supports innovation means also being prepared to fail.”

and support of all staff - not just the management team and the board – has been vital to the success of our GHG Rating as well as other innovations.”

“Trust is also a key component in the innovation game” says Jan Andersen, a US based Port Captain employed by Norden Tankers and Bulkers USA Inc., “there’s a mutual interest between the company and myself in getting the best out of it, the fastest and cheapest way”. After 11 years at Norden Shipping, he is called upon when there are problems – or potential problems.

Andersen started his career in Denmark where he went through traditional Danish school and received his Masters Certificate. But not long after this, his mother fell ill and Andersen needed to return home. Whilst nursing his mother, Andersen decided to study for a Master of Science in Electrical Engineering.

He pursued his engineering career, working as a Sound Engineer for Pink Floyd, Dire Straits and Roxy Music amongst others – this experience taught him to work under pressure

“there’s nothing like an audience to teach you how to solve a problem fast!” In 2004, Anderson returned to maritime and took on the role at Norden Shipping. It is a good fit, “Norden aren’t conservative, they embrace new ideas”.

It was Norden Shipping’s openness to innovation that enabled Andersen to test a drone for cargo hold inspections. He started using a drone fitted with a small video camera to examine the cargo holds, thus more than halving inspection time. And — what is more — at least as effectively.

Taking the place of ladders and hoists, the drone cheaply and safely speeds up the search for cargo remnants from the previous voyage and thus the overall cargo hold inspection before the next loading.

This isn’t an idea that went to the R&D Committee who wrote a report and then presented it to the Board for approval, taking months – if not years – to get going. Anderson simply went to the local Mobile Telephone store, bought the drone for \$300 and then started testing it. It follows the Norden motto of: The time best spent is time spent on preventing problems, reinforcing the idea that disruptive innovation can come from within.

Another good example of disruptive innovation is the Australian company OMC International. The Melbourne based firm, which employs more than 45 maritime and software engineers, is a specialist in real-time Under Keel Clearance (UKC) management technology and understands the need for innovation to drive growth and stay ahead of the market.

OMC Executive Director Dr Terry O’Brien AM founded the company in 1987 after he saw a niche business opportunity for his ship motion model, which he had been working on in academia. In 1993, the first dynamic under keel clearance (DUKCC®) system was installed at Queensland’s Hay Point coal terminal.

Dr O’Brien’s son Peter O’Brien, a maritime engineer and OMC’s CEO, said that before the commercialisation of this innovative technology, ships transited under the traditional and necessarily more conservative static rules. “By integrating dynamic variables such as tides, waves and currents directly into the UKC decision making, our DUKCC®

“Norden aren’t conservative, they embrace new ideas.”



Creative destruction refers to the incessant product and process innovation mechanism by which new production units replace outdated ones. It was coined by Joseph Schumpeter (1942), who considered it ‘the essential fact about capitalism’.

A **disruptive innovation** is an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market leaders and alliances. The term was defined and phenomenon analyzed by Clayton M. Christensen beginning in 1995.



Port captain Jan Andersen with his small video camera-equipped drone. The photo was taken in Vancouver, Canada, when the cargo holds of the Panamax dry cargo ship ECOMAR GO were being inspected before the ship was loaded with sulphur.

In 2015, Prime Minister Malcolm Turnbull announced a framework for Australian innovation policy. The initiatives are worth \$1.1 billion over four years. The National Innovation and Science Agenda will drive smart ideas that create business growth, local jobs and global success.

technology removes the 'guesswork' and is always safer than static UKC rules," Mr O'Brien said. "DUKC® allows the shipping of more cargo, more safely, more often."

OMC International has now released its latest web-based DUKC® Series 5 which last year won the prestigious International Bulk Journal (IBJ) 'Safety in Bulk Handling (Marine)' Award. The launch of the Series 5, reinforces another economic theory that drives growth: creative destruction. This phrase, coined in 1942 by Joseph Schumpeter, refers to innovation that upgrades an existing product to drive new sales and says it is "the essential fact about capitalism".

Surprising though, it is often not just the research and development that cements success, collaboration is also a key factor, says CEO Peter O'Brien. "The importance of customer relationships in the innovation equation must be recognised," he said. "We continue to work closely with government and port authorities such as AMSA (Australian Maritime Safety Authority) and Pilbara Ports Authority to innovate customised UKC management solutions in response

to constructive industry feedback and the application of more sophisticated software technologies.

Interestingly, collaboration is also high on the Federal Government's National Innovation & Science Agenda, recognising that the formation of clusters and the inclusion of various organisations is more likely to successfully drive innovation.

"OMC's pioneering DUKC® technology is now widely accepted as industry best practice to manage UKC but it has not been an easy journey to become the world leader in this specialised maritime field, particularly in the early years when there was very slow take-up of our DUKC® systems. The challenge back then was to convince a necessarily conservative and risk averse maritime industry that new technology invented by an engineer from academia was a better way to manage UKC.

"We will be forever indebted to industry leaders such as Brad Fish (former CEO North Queensland Bulk Ports Corporation), Captain Barrie Lee (Hay Point), Captain Eric Atkinson (Fremantle Port), recently deceased Captain David Baker (Port Hedland) and Roger Richardson (BHP Billiton) who took a huge leap of faith in our technology in the early days by strongly supporting some of the first DUKC® installations.

"In recent years, we have experienced a very successful global roll-out of our technology as more ports and government authorities around the

world find it harder to ignore the significant economic and safety benefits of our proven and award-winning technology.

CEO Peter O'Brien said it was important to acknowledge that the development of OMC's pioneering navigation products has been greatly facilitated by the strong backing of the Federal Government through three separate R&D grants which were awarded over a decade from 1998 in open competition across all sectors of industry.

Disruptive innovation drives growth in stagnant markets. Future innovators can disrupt traditional markets if the idea is right, but collaboration is also an essential ingredient. Although legislation and regulations form the foundations of the maritime sector, the framework for innovation can still foster remarkable solutions.

MIAL will be launching INNO, a group aiming to drive innovation and product development in the maritime sector. The aim will be to form clusters and pursue ideas that will positively impact on the Australian maritime sector and potentially tap into the \$1.1 billion in funding allocated by the Federal Government in 2015. If you are interested in being a part of this, please contact Alison Saunders on 03 9647 6000 or alison.saunders@mial.com.au.

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