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ON THE COVER

In a challenging global supply chain environment, today's shipowners and terminal operators both increasingly look to leverage IT and technology to boost the bottom line. Those who succeed will not only survive; they'll also thrive.

Image: © namning / Adobe Stock

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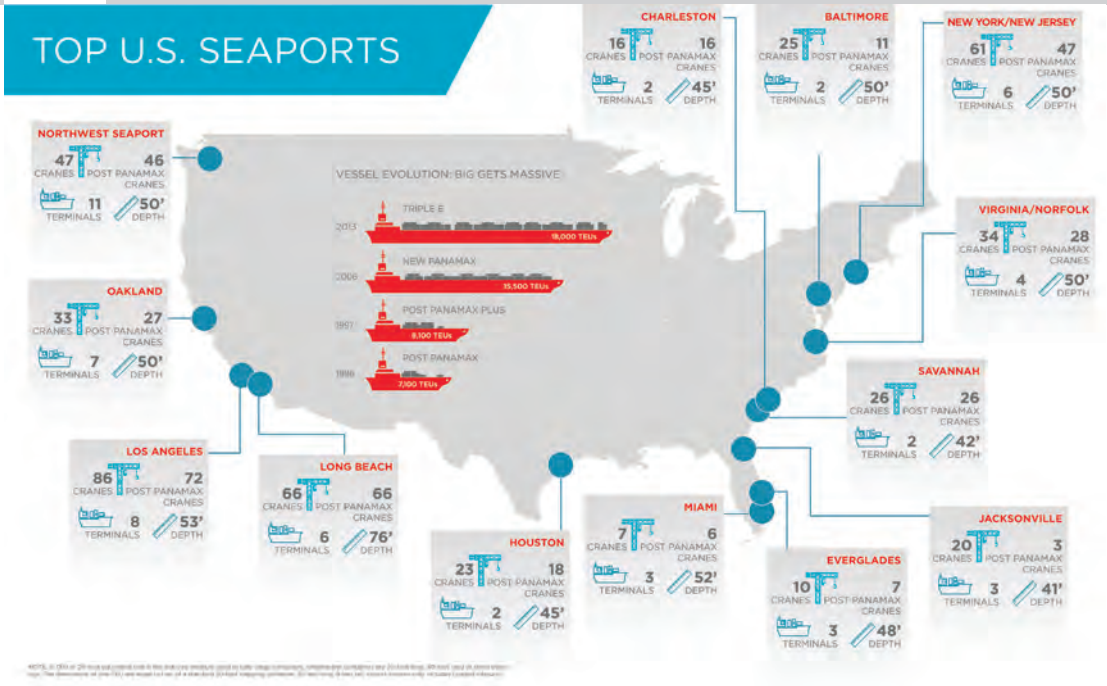

As eCommerce fuels cargo growth, imports are booming and U.S. ports are bracing for the influx.

By Kevin Turner

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Editor's Note

This is IT

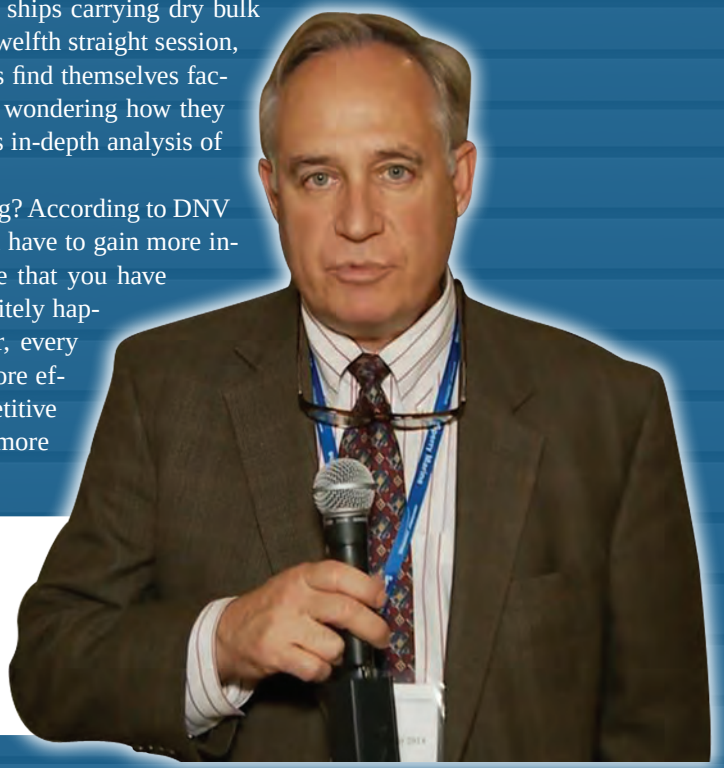
The second quarter of 2018 brings serious challenges for shipowners and operators. Of these quandaries, no two issues resonate louder than the looming 2020 emissions dilemma and the tightening ballast water treatment requirements. Neither promises to bring a return on investment. Both will be expensive at a time when global freight rates don't support that level of CapEx. Nevertheless, another challenge – the race to harvest, organize, protect and then exploit big data – also cannot be ignored. Without this third issue solved, the other two might not matter.

Within this edition, outgoing IACS Chair and DNV GL Maritime CEO Knut Ørbeck-Nilssen aptly describes the dilemma facing shipowners who find that low freight rates prevent them from not only affording new technology, but also taking advantage of what it brings. But, that's exactly what they need to do. The advent of improved and cheaper connectivity has brought IT opportunities, software and technical advances to a global waterfront that is not known to be enthusiastic early adopters. The trick will be to amortize that cost over the long run where it will eventually bring a competitive advantage, economic benefits and, believe it or not, a smaller environmental footprint. Within this edition, you'll find out how to make that happen.

Ashore, terminal optimization also means automating the supply chain management process, leveraging real-time KPIs and trending analytics to improve and standardize best practices. That's increasingly important as ports on all three U.S. seacoasts report record TEU throughput, partly as a function of the expanded Panama Canal. The U.S. Department of Transportation's prediction that cargo volumes will increase exponentially over the next 40 years is coming home to roost. Only those ports and terminals that embrace emerging technologies can fully accommodate that growth in a sustainable way.

You can't talk about tough operating environments without mentioning the dry bulk sector, which as we finalize this edition, is finally showing signs of life. In late April, the Baltic Exchange's main sea freight index, tracking rates for ships carrying dry bulk commodities, firmed as rates for capesize vessels rose for a twelfth straight session, reaching a 15-week high. That's welcome news for operators find themselves facing those three previously mentioned challenges, while also wondering how they will pay for it. Will it last? To find out, turn to Barry Parker's in-depth analysis of the sector, starting on page 40.

So, you ask, what's the bottom line for the future of shipping? According to DNV GL's Ørbeck-Nilssen, "You leverage the technology that you have to gain more insights and then you can also engage more with competence that you have on the land-based side of the organization. So that will definitely happen also for deep sea shipping. I think every ship manager, every shipowner is very much looking to find possibilities to be more efficient, and naturally in this environment, to gain the competitive advantage on the OpEx side gives you the possibility to win more business." I couldn't have said it better myself.



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Piloting Shipping's Fourth

By Paul Comyns

Vessels today have the capability to gather information and data from a wide variety of sources. This data can inform the crew about the impact of acceleration on the hull, provide updates on lubrication use during slow steaming, and use dynamic positioning to automatically maintain a vessel's position and heading - among many other things. So while shipping might consider itself a conservative industry, there's nothing old-fashioned about the technology that's driving its progress today.

For a long time the core industry drivers for the adoption of new, better, higher-speed communications technologies across global fleets has been a dynamic duo: crew welfare and driving improvements in operational efficiency. These are the obvious benefits of evolving your satcoms infrastructure, just as obvious as providing email and phones for everyone in your offices. This is Business IT 101. Investing in keeping the crew happy will save a lot of overheads on recruiting and training new crew. The numbers seem to prove valid, as was well illustrated in the recent Nautilus Crew Survey. But is it really the key driver? Will that jumpstart the fourth industrial revolution in shipping as we look towards the challenges that shipowners face over the coming years? Could taking a broader view generate new value creation that will have a tangible impact on the bottom line?

The answer is in the data; in how to efficiently collect it, analyze it, and then scrutinize it to reveal not only the questions we should be asking, but what some of the answers to those questions might be. It is this process that will generate the insight required to optimize operations and deliver the best possible value to customers. The intelligence gleaned through observing the entire operational process and lifecycle in this way will create the space to generate new business models, new ways of thinking, new services, and opportunities for new markets and avenues of revenue.

If we look only at the connectivity of each vessel as a cost center, then the ultimate aim of optimizing user experience, creating new value, generating new, higher margin revenue and securing our place in tomorrow's business model will remain a significant challenge.

Take a page from the more mainstream IT industry of today. Everyone is talking about convergence. Get standardized, get streamlined, get optimized. And what are the stated benefits? Delivering an easier and faster installation process to reduce your operational downtime and control potential costs associated with laying down this critical baseline infrastructure to enable your digital future.

Intellian, through the innovation behind its v-Series antennas, has played a pivotal role in revolutionizing VSAT, moving it from a cumbersome technology to a viable, convenient communications solution which is at the forefront of pioneering remote management. Key to the success of bringing this to fruition has been creating frequency flexible solutions that future-proof the investment in this technology through an adaptable architecture for compatibility with future satellites, whether they operate on Ku or Ka-band. Through additional developments including applications for internal use to more accurately diagnose potential issues remotely and apply the correct fix before larger issues arise, field interventions can be reduced, thereby controlling costs and increasing uptime.

It's a given in today's market that big data will have a significant impact on tomorrow's operations. What's less well understood is what's required. If freight forwarders want to be able to identify the state and condition of their cargoes, or reefer operators improve their schedule reliability, they need to have the infrastructure in place to reliably deliver it. Smart technology has already begun to revolutionize shipping, and will continue to bring changes to the industry in the near future. By ensuring that

Industrial Revolution

vessels are connected to the digital ecosystem through reliable antenna technologies, shipowners can ensure they are keeping apace with developments today, as well as future-proofing themselves for technological innovations to come. Innovation in the digital space moves fast, and without forward-thinking technologies that continually look to anticipate the next step in the journey towards digitalisation and automation, shipowners can quickly find themselves behind the curve, and out of pocket.

When ships can converse with their operators, vessel feedback becomes part of the conversation. Second-guessing from shore is eliminated because speculation is no longer necessary, risk is reduced with greater understanding of real time variables, and reliability improves to the point that it almost becomes a redundant metric. If you want to live in that world, integrated solutions that ensure a seamless path to strong connectivity are the first step. The antenna capacity needed to facilitate this step-change is nearly within our grasp, and Intellian is already driving innovations in antenna technologies that will support future digital applications.

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Creating Value, Reducing Costs and Superior Data Management

Shipowners can take advantage of emerging technology opportunities without breaking the bank.

By Martin Killian, Sr.

Vessel operators are constantly looking for ways to optimize efficiency, reduce costs and improve profitability, a combination of requirements that requires embracing new technologies while also managing investment risk.

The opportunity afforded by better ship-shore connectivity is the most direct pathway to achieving these improvements and operators are adopting all the right tools – data collection and analysis, fleet management and video monitoring – to get the job done. The issue which remains is that to realize the benefits means overcoming historical resistance to an increased focus on communications.

In fact, the majority of users recognize that not only has cost of maritime communications fallen consistently for a decade, but also that spending on better connectivity can drive value into their operations. To do this takes commitment to understanding your own business requirements, which services might fit that profile and how they can be managed so as to control costs while unlocking the potential of new applications and greater bandwidth. You can get there from here.

Understand Your Needs

Perhaps the most important factor in embracing new technology in shipping is to properly understand the needs of the business and how enhanced communications can enable this. In most cases, it will mean greater collection of data – whether for regulatory compliance or for performance monitoring.

Traditionally, the actual data needs of many shipping companies have been small – at least in comparison to other industries. For some basic processes that will continue, but the availability of lower cost bandwidth is driving new applications such as video and real time voyage monitoring that will increase the data load.

Separately, and in a world where the MLC Code (2006) is the new normal, the demand of crew connectivity is stronger still and will continue to grow, even as automation increases in the shipping industry. At a recent shipping industry event, the CEO of a leading tanker company noted that the first question prospective recruits ask its crewing agent is not about the company safety record, but whether there is broadband access onboard ship.

This suggests that operators need to specify a high bandwidth system in order to meet demand – and it is certainly true that demand for maritime VSAT is growing strongly. Globecomm provides its own globally-managed Ku-Band VSAT system to power new applications and services with L-Band systems increasingly used for backup.

VSAT will solve multiple issues at a stroke – bandwidth, speed, availability – but it also creates issues that operators need to be aware of and manage. Terms like 'all you can eat' and 'unlimited data' should no more be taken at face value at sea than they would be, on land. It is a highly effective way of increasing capacity and enabling the data to flow, but VSAT needs to be seen in context with management of bandwidth – and increasingly where new communications options can fit in alongside – providing even greater efficiency with no loss of performance.

Select Your System Accordingly

With maritime communications system becoming increasingly complex, it is critical to achieve the right level of network control, combining cloud processes and cyber security to create simple, reliable connections.

Capable of managing networks via multiple satellite/3G-LTE inputs, the Globecomm Nimbus smartbox features automatic switching between satellite and cellular networks based on pre-defined priority and supports connectivity to specialist applications. It also makes possible a richer browsing experience at sea by using smart caching and compression as well as

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Offered in three versions, Nimbus is designed to meet diverse needs. Nimbus Lite was developed to suit owners with low data needs and limited communications outlay. The original Nimbus box is perfect for users who need to unlock the potential of maritime communications while securely controlling defined networks. For shipowners using high throughput communications, Nimbus Pro is designed to drive the value of VSAT to the connected maritime business.

On shore, Globecomm's Cirrus Portal can be used to manage preferred satellite connectivity and redundancy, configure user accounts, establish firewall rules and manage updates. With detailed real-time monitoring and reporting tools, Cirrus provides access to a range of features, giving full control over even a large fleet at any time and including remote connections to shipboard PCs via the Nimbus box.

Choose Robust Cyber Tools

It is equally important that vessel operators protect themselves from a potentially expensive cyber-attack and have in place the resilience they need to operate securely.

Nimbus was designed and built with cyber security in mind and includes features that are becoming widely adopted as the industry standard. These include two fully-managed firewalls to provide a robust intrusion prevention system with deep packet inspection.

Shore-to-ship connections are always encrypted using the latest standards and end-to-end connectivity is effected via private IP space with no exposure to the public internet. Nimbus also ensures the separation of crew and business networks so a malware infection cannot spread from one to the other.

Notably, Globecomm provides clients with a private network setup over all circuits – VSAT, L-Band and cellular – something few other connectivity providers can claim. Using private IP and tunneling over controlled networks provides a double layer of security. Using a private satellite network protects the ship's terminal from unauthorized transmissions, and blocking mechanisms provide further protection.

Monitor and Manage

The increasing popularity of VSAT also brings with it the need for better monitoring and management of these connections. Knowing that your system is operating as expected, how much throughput remote sites are achieving and whether interruptions are likely are becoming key requirements.

Globecomm solves this problem with Connect, a twin-portal service designed for ship and shore-based access to provide full visibility of service performance.

The Connect Ship portal provides visibility to the master and crew of network status, current beam in use, ship's course and speed and diagrams of beam direction and elevation enabling better communication's management. The Connect Customer portal is accessible to shore-based users who wish to monitor location and network performance and receive comprehensive ship-based telemetry from their fleet. This can benefit fleet operators with more efficient routing and potential fuel savings.

Consider All the Options

Because vessel operators will always want to find better ways to control of their spending, Globecomm has partnered with a global cellular service provider to also offer a maritime cellular service, Globecomm Roam. Providing 3G, 4G and LTE services at speeds of up to 100 Mbps but at prices much lower than traditional satellite services, Globecomm Roam bundles a cellular modem, global roaming SIM card and maritime antenna to enable connectivity up to 30 miles from shoreside cell towers.

The service has been engineered to interface with Nimbus, providing seamless switching between satellite and cellular services. Users of L-Band systems can take advantage of the much lower cost of cellular communications, while VSAT users can use cellular connections in cases of 'line of sight' interruptions while in port or near shore, with higher throughput than L-Band at much lower costs.

While cellular roaming services can be lower cost than L-Band satellite services, the higher throughput capabilities can also lead to higher volume consumption. Not to worry. Globcomm has solved this problem by limiting cellular consumption to a fixed monthly fee depending on the plan selected, meaning that users can enjoy, at the same time, optimized 'least cost' and highest bandwidth connections, while still keeping control of their budgets.

At a time when communications costs for operators can sometimes be (mistakenly) construed as just a cost center, it is nice to know that a lower cost, higher performance option is available, shortening by a significant amount, the time until you can amortize the cost of communications against the gains brought by today's technology. And, even in times of low freight rates, escalating regulatory demands and perilous political Black Swan events, that's something you can take to the bank.

The Author **Martin Killian**

is the Senior Director of Product Management Satellite Solutions for Globecomm. Killian has 14 years of experience in the satellite communications industry, including eight years involved in sales and product management at Globecomm. Prior to this he joined France Telecom Mobile Satellite Communications in January 2004 as an Account Manager and was promoted to Director of Commercial Sales Americas when the firm became Vizada in 2007. Killian holds a Master of Science in International Business, as well as a BS in Marketing from Florida Atlantic University (FAU).

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A Closer Look

PORTS: **Dubai**

Dubai Continues to Rise to the Challenge

With more than 5,500 companies in the maritime sector, Dubai is rapidly becoming one of the major clusters around the world.

By Mark Venables

Credit: Dubai Maritime Cluster Office

Throughout history, Dubai has been the leading trading port in the Arabian Gulf, and now the UAE Government is determined that the country continues to be a hub for the maritime industry. Dubai itself is striving to become one of the world's top shipping destinations through its Maritime Vision 2030 that it launched four years ago. The maritime sector is expected to be worth $66bn to the emirate by 2018, according to Oxford Business Group, with further investment planned for the established Jebel Ali Port and ongoing development at the two million square meter new free zone, Dubai Maritime City.

Charged with delivering these ambitions is the Dubai Maritime Cluster, part of the Dubai Maritime City Authority (DMCA). The DMCA was established in 2007 to monitor, develop and promote maritime activities while offering investment opportunities to boost Dubai's competitiveness at regional and international levels.

> *"Jebel Ali is our flagship port and has been recognized as the Best Sea Port in the Middle East for over two decades reinforcing our role as a leading enabler of world trade."*
>
> – Sultan Ahmed Bin Sulayem, DP World Group Chairman and CEO

Rising Region

The Leading Maritime Capitals of the World of 2017 report published by Menon Research and DNV GL was announced in Singapore late last year ranked Dubai at number ten overall. "When we launched the strategy four years ago, Dubai was not even in the top ten, but five years into our hard work to manufacture a product that could be attractive to the shipping community, look where we are today," Nawfal Al-Jourani, Chief Officer – Dubai Maritime Cluster explains. "In terms of attractiveness and competitiveness Dubai is number five globally. In terms of the overall ranking as a shipping center we are at number ten.

"They asked 1,600 professionals from the maritime community all over the world what is the most important or attractive overall global maritime center of the future, Dubai jumps to sixth overall. This is a vote of confidence. It is important to us as it is a vote from the very community that we are trying to attract."

Al-Jourani explains that the strategic direction is very simple; they want to be a leading global maritime center. "For that what we are trying to do is to develop, regulate and promote what Dubai has to offer," he says. "We know that there are other cities around the world that are doing the same, but that will always be the case.

"I always say that we compete against ourselves; that is the most important thing that we challenge the status quo every day. What type of regulation makes the shipowners life easier? What kind of financial guidelines do we need to put in place to attract them to come here? What human resources regulations? What type of criminal law justice system? I'm sure if you look at these things you will see why Dubai is way ahead in this region. This is what we mean by a world-leading maritime sector."

Another huge boost for the region came in December when the UAE became the only Arabic nation to ever win a seat on the IMO council in category B. That, according to Al-Jourani, was vital as the region can now have a direct influence on business and regulations. "The IMO is talking about Ballast Water Management, sulphur emission deadlines," he continues. "Imagine a room where these ten nations sit and decide on these things. We didn't have a voice before, now we have so we can now say what works and what doesn't work."

Reasons to be Cheerful

One of the key components of the maritime sector in Dubai is the oil and gas industry, which has taken a big hit since the oil price crashed several years ago. According to Geir Fuglerud, Area Manager, Middle East and Africa at DNV GL that sector has hit the bottom and there is a renewed optimism. "We see within DNV GL, more requests for quotation, more business happening, rigs coming out of lay-up, vessels are being reactivated," he says. "It is not moving quickly, but there is a positive trend to it."

Even though Dubai has climbed the rankings as a maritime cluster there is still an area that causes concern to Fuglerud. That involves innovation. Out of the top 15 maritime capitals, Dubai was rock bottom when it came to research. "They have a way to go and there is a big appetite to improve," he says. "This study came out seven months ago and I am impressed how Dubai has already taken steps to address it, and that is one of the things that impresses me with this place, they make their mind up on where they want to go, and they go there.

"There is a massive drive now that they have gone from 13 to ten in these statistics, which has shown them that the policy they put in place five years ago has paid off and by addressing new policies on research and innovation they can further climb the rankings."

Fuglerud's optimism is fueled by the fact that Dubai is a

"This study came out seven months ago and I am impressed how Dubai has already taken steps to address it, and that is one of the things that impresses me with this place, they make their mind up on where they want to go, and they go there."

– Geir Fuglerud, Area Manager, Middle East and Africa at DNV GL

Credit: DNV GL

strategic location. It is well positioned for the emerging markets and there is huge growth potential for this region. "There are a lot of positive developments in Saudi and that is positively impacting UAE as well," he continues. "For all the emerging trade towards the East Coast of Africa this is a very good location to drive that from. For the maritime industry in general I think the future is bright.

"If you look at the government, they are moving very quickly. They seem to be moving quicker than other countries. But companies seem to be lagging a little bit behind, at least in the maritime industry, but the big players are developing quickly and investing heavily to position themselves."

Living in a Free Zone

One of the big success stories in the emirate is DP World and its Jebel Ali Port and associated free zone. The port itself is the tenth largest container port in the world. Its 102 ship to shore (STS) cranes handled 14.7m TEU in 2016 from 11,000 vessels. The facility has three terminals. Terminal one and two are older facilities that are about to undergo upgrades to increase automation, while terminal three is already fully automated. Terminal four is under construction and will be brought on line as market demand increases. That expansion will bring total handling capacity to 22.1m TEU by the end of this year.

The huge Jebel Ali Free Zone (Jafza) is home to more than


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"There is a tacit acceptance of BWM, although there is still a resistance to it from the shipowners. We have seen the number of 3D scans double last year compared to 2016, but many companies are still planning on leaving it until the last minute."

– Matthew Plumtree,
Manager, Green Technology Solutions

Credit: Goltens

7,300 international companies, while the port has tremendous capabilities to process and deliver cargo. Jebel Ali's gate automation system and paperless processing of cargo documentation are among the most modern technology-driven facilities in the world.

"Jebel Ali is our flagship port and has been recognized as the Best Sea Port in the Middle East for over two decades reinforcing our role as a leading enabler of world trade," Sultan Ahmed Bin Sulayem, DP World Group Chairman and CEO, says. "The reputation of Jebel Ali has been built over time on our operational efficiencies, through the work of our employees and our customers, and without whose support this achievement would not have been possible.

"Both the seaport and airport are within the free customs zone which doesn't happen anywhere else in the world. Air cargo can be converted to sea cargo and vice versa in only 20 minutes and there is only one entry."

Goltens goes Green

Sometimes, a vessel in port needs more than just a berth to discharge or load cargo. Fortunately, the Dubai branch of global independent repair specialist Goltens operates a 10,000 square meter facility within the Dubai Maritime City (DMC) that is capable of docking vessels up to 6000 DWT, 125M LOA. The Dubai hub is a key location in their global network that enables shipowners to minimize asset downtime with diesel services, in-situ machining, and BWT system retrofits. They have, for over 70 years, been the alternative when the original equipment manufacturer is unable to meet the budget or the time frame available. One area that they are looking to for growth is environmental services, a division that is led by manager of Green Technology Solutions, Matthew Plumtree.

Goltens have been involved in supplying green services since 2010 with the same ethos that they have from a repair point of view: reducing downtime and minimizing the cost to the customer. "The critical legislation we have now is Ballast Water Management (BWM) and the Sulphur Cap," Plumtree explains. "We have been talking about it for eight years and it keeps going backwards and backwards, and the Sulphur Cap comes into effect in 2020. The difference between the two is that with BWM you have lead time based on IMO rulings whereas sulphur emissions is a drop dead date of 1st January 2020. After that date you must either use low sulphur fuels or have a means to clean exhaust gases to meet requirements.

"There is a tacit acceptance of BWM, although there is still a


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resistance to it from the shipowners. We have seen the number of 3D scans double last year compared to 2016, but many companies are still planning on leaving it until the last minute. One contract we signed in 2016 for ten vessels has been postponed several times and they will probably pick it up again in 2023 to carry out the installation. We have scanned the vessels, carried out conceptual design but it has been on hold until the last minute."

Plumtree says that shipowners are still hoping that they will be able to avoid the installation. "While there is this general acceptance, shipowners are still thinking that at some point there may be a change in the regulations and vessels of a certain age may be exempted. The problem with BWM is that the technology has still not been proven; it's out there and installed on many vessels now but is still an unknown factor about how it operates. There is no return on investment for a BWM system, it is purely a cost. You can't charge more because you have a BWM system because it will be a requirement."

Managing the Market

When it comes to shipping services, being able to handle an account anywhere in the world is a great asset. With 300 offices in 70 countries Inchcape Shipping Services are in prime position with that regard. Their office in Dubai handles the two key ports in Dubai and is the pivot for their Middle East operations. It's just more reason that Dubai is rising to meet the global logistics challenge.

One of three global maritime service suppliers – along with Ulstein Ship Services and Gulf Agency Company – together they capture 15 percent of the global market – each with five percent. However, their tightest competitors are not the other two global companies but the local companies who are often stronger and more flexible. In the Middle East region that is Kanoo Shipping and Sharaf.

"The whole sector is now more cost aware and conscious of credit terms, so we are not seeing the same sort of prices that were there before," Daniel Vikstrom, Vice President Marine Services Middle East at Inchcape explains. "It is no longer based on service levels and personal relationships, but purely on price with many companies. As an example, the average charge for a tanker call into Dubai is now $500 down from around $2,400 before the oil price dropped."

One of the major challenges established agents face is that there are no barriers to entry into this industry. "If I wanted to I could resign my position, get in my car and drive to Fujairah and apply for a license and set up as an agent with very little overheads," Vikstrom adds. "There are more and more smaller companies emerging that will not be able to cope in the long run. The trend will be that there will be some consolidation with the big three probably ending up with around 15 percent of the market each."

Local Port, Global Reach

With a seat at the grownups table at IMO, and world class facilities packaged in a high tech service package, the Dubai Maritime Cluster is determined to further develop an already impressive regional logistics hub, into one of the world's top shipping destinations. Leveraging global vendors, solid local infrastructure and regional relationships, they are well on their way to doing just that. The Dubai Maritime Vision 2030 initiative, launched just four years ago, is already yielding fruit. The next twelve years therefore promise to be even more exciting.

The Author **Mark Venables**

is an experienced maritime journalist and editor that has covered the sector for over 20 years for both national press and maritime trade publications.

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Addressing the Current Trucking Crisis

A long time coming, a growing trucking crisis is now certainly here. An important piece of the intermodal supply chain equation faces steep challenges in 2018, and beyond.

By Klaus Lysdal

Looking back at what has led us to our current trucking situation; it can be argued that "we saw this coming." For more than a decade now, the US logistics sector has been plagued by a shortage of truck drivers. While the current crisis was exacerbated by the Federal Motor Carrier Association's Electronic Logging Device (ELD) mandate implementation last December, this was certainly not the sole reason for today's conditions. It was, however, the straw that broke the camel's back. Moreover, there was more that industry could have done to alleviate the pain, especially knowing what was coming in advance.

ROOT CAUSES

The industry has long been witnessing a trend of truck drivers departing the profession and much of that is a function of money. The perfect storm of declining trucker income has met the specter of a rapidly aging workforce. The current average age of truckers now exceeds 55 years, and that situation is worsening. As a result, many trucking companies have closed and truck drivers have moved on to different jobs. Already heading into decline, and now coupled with industry's failure to renew its talent pool, there simply isn't enough new (and qualified drivers) to meet current or future demand.

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One can't really blame the change of heart for today's truckers. It's simply become an unappealing job in a market where many other opportunities are more attractive to the talent pool. The container trucking industry is constantly losing out to distribution trucking companies where drivers usually run the same route every day, but also get to return home every night, which gives them more 'work-life' balance.

Container truckers, however, often have to stay on the road all day and overnight, all week, sometimes even on weekends. That's a sacrifice that requires a worthwhile reward; or in other words, a good solid income. Laying the two options side by side, the winner is clear: if you can make the same amount of money driving trucks without the frustrating wait times at ports, then it makes sense for drivers to choose that path. There is a point where something is no longer worthwhile and, unfortunately, despite having passed this point ages ago, we've done nothing.

THE ADVENT OF ELD

The ELD mandate was the tipping point for the shortage. Limiting the hours drivers spend on the road means truckers are forced to earn less as they are forced to stop when the stopwatch starts. While this was understandably implemented for safety reasons, it has also severely crippled logistics.

What the mandate has done is restrict truckers' money-making abilities. They're now unable to drive as much as before and make money on the distance. And this is a vicious cycle. A lack of drive time means containers pile up, which leads to port congestion and a longer wait time. Given that the money they earn typically comes from distance covered, the time spent crawling through ports, terminals and yards clearly does not pay the bills.

HOW INDUSTRY PLAYERS ARE COPING

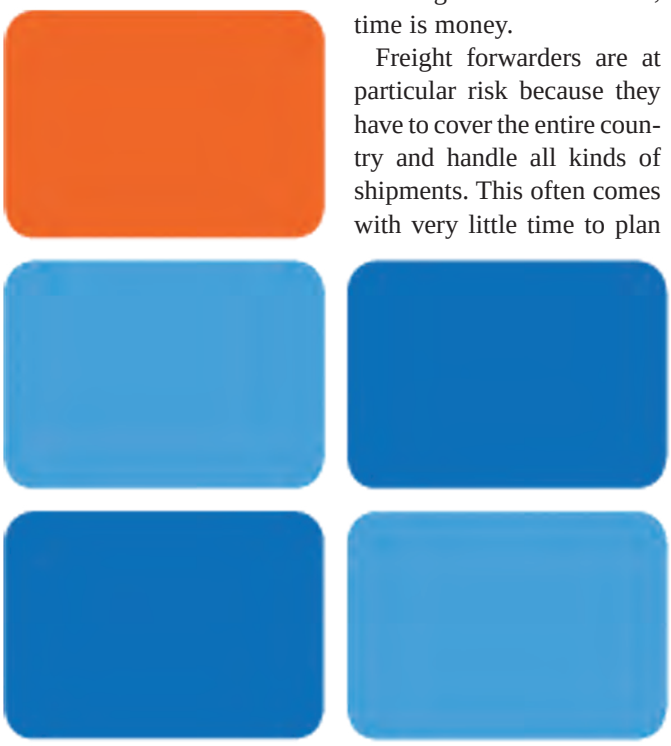
Ever since the shortage escalated, shipping lines have been clear in their approach. CMA CGM has raised its prices in certain areas to cover ELD-related costs. ACL has stopped servicing Chicago altogether and others are warning that they will only offer services as they become available and are furthermore refusing to make guarantees.

As for exporters and importers, the effects depend largely on their set up. Some may have solid trucking companies that have not been substantially impacted by ELD issues and are reliable enough to support them. In these cases, the driver can, for example, make a round trip within his allotted time. But for others, it can have rather severe effect on the supply chain

"The ELD mandate was the tipping point for the shortage. Limiting the hours drivers spend on the road means truckers are forced to earn less as they are forced to stop when the stopwatch starts. While this was understandably implemented for safety reasons, it has also severely crippled logistics."

as they may see major rate increases and/or face significant struggles to ensure reliable deliveries.

The crisis has worsened to the point where current trucking rates – spot, contract, or LTL – are increasing despite what is supposedly a relatively weaker timeframe. And the cost increases aren't limited to paying more for truckers. Additional costs take the form of storage and demurrage while awaiting a driver. After all, time is money.



Freight forwarders are at particular risk because they have to cover the entire country and handle all kinds of shipments. This often comes with very little time to plan or schedule a trucker in advance. With the current crisis, we're seeing an unprecedented number of delays and cancellations and have had as many as three last-minute truck cancellations in a single week.

At iContainers, we are warning clients about the ongoing problem and helping them find other solutions. At the same time, we're constantly adding truckers to our trucker portfolio, which is an important and necessary step. But no matter how many truckers or drivers they may have, shippers are still facing shortages. A trucker that has 70 trucks has a general volume to ensure that those trucks are booked in advance almost every day, so last-minute bookings can be challenging. This is especially so for unanticipated changes such as truck damage, which throws the cargo off schedule, or rescheduling of drivers to cover the truckers' key accounts.

Despite the severity of the situation, we are not yet at a turning point. As the crisis deepens, rates will need to increase as a lure to attract more drivers into the container trucking sector. The playing field also needs to be evened out to make sure the driver makes a proper living given the sacrifices he or she makes. Unfortunately, this isn't something that will happen in days, nor weeks.

LOOKING AHEAD

There have been reports of an increase in the trucking order book, which some say indicate a capacity increase. Assuming all orders go through, these trucks

won't arrive until the summer at the earliest and then there's also the issue of getting enough drivers to drive these trucks. Until then, we'll continue to face shortages and congestion at ports and ramps because there are not enough truckers to move the cargo out in time. On the export side, more bookings will roll as exporters won't be able to deliver for cut-offs in time. The domino effect for industry could therefore be particularly severe.

Change is needed, and fast. And, there are many layers to this onion. Industry needs to improve truck drivers' working conditions and at the same time, find ways to attract, recruit and retain the next generation of drivers. Separately, ports and terminals must improve gating procedures to speed up truck turnaround and reduce container dwell times. Mile-long waiting lines at the ports aren't conducive to anyone.

In advance of substantial efficiency gains, there is an entire infrastructure issue that needs to be resolved. To their credit many ports – witness South Carolina Port's two inland ports that come with rail access – have already begun. Nevertheless, internal trade has grown at a rate that current infrastructure was not built to support or sustain. Direct access to ports, inland drop-off locations where cargo can move on rail or barge closer to its final destination are real options. There's a cost and time factor to everything. As a whole, or by parts, all stakeholders need to be a part of the solution; a solution that needs to start now.

The Author

Klaus Lysdal

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All Images: courtesy DNV GL

In late April, DNV GL Maritime CEO Knut Ørbeck-Nilssen delivered the annual review for the International Association of Classification Societies (IACS) in London, UK. Quality, modernization and transparency have been the three fundamental themes of IACS during DNV GL's Chairmanship, and this approach was widely reflected in his presentation. As Ørbeck-Nilssen's tenure at IACS winds down, he had much to say about his vision for the organization's future role on the global waterfront. First and foremost, that involves both IACS and its twelve Member societies collectively acting as a guide for the shipping industry, identifying the path for others to follow.

Just prior to his London address, ***MLPro*** caught up with the DNV GL CEO at the Connecticut Maritime Association's (CMA) annual conference in Stamford, CT. In a more casual setting, Ørbeck-Nilssen delivered a similar message, but one which resonated on a personal level. And, although he steps down from his IACS responsibilities at the end of June, what he's accomplished in the past year will likely endure far longer.

DELIVERING LEADERSHIP

"When many in the maritime community feel like their businesses are in dire straits, IACS and its Members, the top classification societies, need to be a beacon of light setting the course ahead – with modern requirements, transparent processes and the highest quality of service," the Chairman said. Highlights for IACS and its Members from 2017 include achieving full compliance with the International Maritime Organization's Goal Based Standards; ongoing industry involvement in cyber security and autonomy; and the launch of new membership criteria.

Throughout his tenure at IACS, Ørbeck-Nilssen says that his main focus was on just a few specific areas. "With all the developments in the industry – especially innovative solutions, automation, going for more autonomy – it was really to make sure that the IACS Unified requirements did not have any barriers in place that would prevent the industry from taking these innovative and modernized steps forward. So that was a really important focus area." The use of modern sur-

Future Vision:
Quality, Modernization and Transparency

Outgoing IACS Chairman & DNV GL Maritime CEO Knut Ørbeck-Nilssen shares his outlook on the future of Class.

By Joseph Keefe

vey technologies – drones, for example – is one area that is gathering momentum. And, that's an area where DNV GL in particular has been a leader.

"We introduced that two years ago and have done that now for all different types of ships and also for offshore units. It's a great way of bringing the item to the surveyor rather than the surveyor having to go to elevated heights and inspect." Just two years later, many owners like to have it because they can see that they save costs and time and it also promotes a level of safety during the survey itself. DNV GL has, in certain places, even put into place a drone operator. The time and money saved by not having to erect scaffolding inside a cargo or ballast tank, for example, lets the use of drones pay for itself many times over.

It's about removing the 3 D's of survey work – dull, dirty and dangerous – from the equation. Ørbeck-Nilssen explains, "Absolutely. That's the whole idea. That's sort of the principal of bringing the survey item to the surveyor, rather than the surveyor having to go and visit the more dangerous places. The technology provides high definition resolution so you are really in a position where you can, from the footage of the drone, judge whether the corrosion is a problem, where there are any structural damages.

That drone also doesn't get tired. You just need to have battery capacity, adds Ørbeck-Nilssen. That means that the surveyor might not have to climb across six stringers in a hot sweaty tank; something that might take an hour to accomplish. "Going forward – we've done this for two years now – I see that we know the geometry of the tank, so we can easily predetermine the flight pattern for the drone. And having that predetermined, you don't actually need to be inside the tank. In certain circumstances, you don't even need to gas-free the tank."

This and other similarly innovative technologies must be given the chance to succeed. And Ørbeck-Nilssen believes that the IACS rules must reflect what's to come next, "… to allow for such new technologies to be used, in the interest of safety and in the interest of the working environment for those people."

QUALITY MEANS COMPETENCE

Another key area of concern for IACS involves a close look at the membership criteria for the organization. As more and more of the smaller, so-called second tier class societies look to align themselves with IACS, the need to vet these organizations in terms of quality, says Ørbeck-Nilssen, becomes paramount. "We are naturally concerned about making sure that new [IACS] members fulfill certain quality levels and have the right competence. And that's why we had to look into the membership criteria, because there have been some significant developments of the regulatory side with the common rules. Anyone who wants to become a member – or is a member – needs to have competence."

On the topic of quality, Ørbeck-Nilssen declined to discuss the El Faro case – something that generated quite a bit of interest at CMA. Instead, he said, "I think that has always been the history of Class, that we have always tried to learn from the experiences of the past, and that's where you see a lot of the changes in rules and requirements, basically built on experiences from the past, and now we can do it better for tomorrow. And that is how we have always developed the Class rules so we always develop the service, and I'm quite sure there are things to learn from the El Faro case. But I don't want to comment on that case specifically."

NOT IN MY LIFETIME

It was Maersk's CEO, not too long ago, who opined that when it comes to unmanned vessels; that might happen, just 'not in his lifetime.' We asked Ørbeck-Nilssen about that possibility, and the forward thinking DNV GL CEO replied quickly, "I think we should first of all start by clarifying that there is a big difference between autonomous shipping, autonomous vessels, and unmanned vessels. Autonomy and high degrees of autonomy make a lot of sense because you will have more information coming to you from sensors placed on various sorts of equipment. With increased connectivity, you will have the opportunity to have more information about the status of the performance of the various components on board. And having that information, you will be able to a certain degree to reduce, for instance, the number of officers attending the engine room. Maybe for a tanker, we have four officers, you could possibly reduce that to three or two officers. That is not unmanned, but that is a high degree of automation which makes sense.

"You leverage the technology that you have to gain more insights and then you can also engage more with competence that you have on the land-based side of the organization. So that will definitely happen also for deep sea shipping. I think every ship manager, every ship owner is very much looking to find possibilities to be more efficient, and naturally in this environment, to gain the competitive advantage on the OpEx side gives you the possibility to win more business. Unmanned vessels – that's a completely different story and I would say that it's not likely to happen

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because you have equipment on board that needs maintenance, you'll still need for emergency situations to have people there to be able to respond, so that will be maybe for the very niche applications. We will see some, say, highly autonomous maybe even unmanned vessels, but again, this is more for niche applications."

Ørbeck-Nilssen points to an ongoing project in Norway where a small container feeder travels a fairly short distance between two Norwegian ports, directing the conversation towards the environment. "I think if you look at this not just from a maritime perspective but from a logistics perspective, it takes away something like 42,000 truck trips. If you look at this from an environmental perspective, having an electric small-feeder, unmanned doing this transportation – rather than putting it on the road on the trucks, it makes a good calculation for the environment. And these are what I would call niche applications, where it makes sense to look at this: sheltered waters, the route is the same every day, and there are limited parameters that change."

TOMORROW'S MARINER & AUTONOMOUS SHIPS

As shipowners and class societies both leverage technology to improve shipping, one inevitable outcome is that that there will be fewer mariners needed to do the job. Or, will there? On this side of the pond, reduced manning has always been a sore spot with unions and safety advocates. Leaving the labor aspect of the equation out of it, the question of shipboard maintenance is another area of concern. Not necessarily so for Ørbeck-Nilssen.

"You will always have people on boats because of the maintenance that you need to do. If you project five to ten years into the future, the systems will become gradually more complex because we are combining software and physical systems, so these cyber physical systems will be more and more demanding

The Halliburton well stimulation vessels under construction at ThomaSea in Louisiana.

for seafarers to cope with. We talked about bringing the survey item to the surveyor, and in this case, we are talking about bringing the expert on board to the vessel to support the crew."

This, says Ørbeck-Nilssen, will require a much closer connection with shore operations. And, he insists, it could lead to extending the running hours for many pieces of equipment.

"And I think this is what we will see – more information – intelligent information available," he added, explaining further, "we will be able to do the condition-based maintenance in a smarter way. And by doing that, I think we will improve the performance of the equipment, and we will be able to still do the necessary maintenance, but at the right times. This is the future. This is what will happen."

If so, the mariner of tomorrow is going to be a different person. Ørbeck-Nilssen agrees. "Naturally, seafarers will have to also change some of the competencies that they have, and be able to deal with shore organizations, and some of these more complex systems."

TRANSFORMATION – OR REVOLUTION?

For many years – arguably stretching from 1930 up until the turn of the century, advancements on the water were typically measured deadweight tonnage or the size of the vessel itself. That's because shipping was (except in rare instances) anything but an early adopter of any new technologies. That's changed in recent years, in no small part because of improved and more affordable ship-to-shore communications. But, the changes, even if they seem to be picking up steam, have been gradual. Ørbeck-Nilssen explains why.

"Many people ask me whether we will see a revolution and I say, 'No, I don't think there will be a revolution – there will be a transformation, a gradual transformation.' And it's really to do with the current market situation. Basically, there are enough vessels on the water today, so ordering will be limited for – it's difficult to say – but at least for the next three to four years. So there will be sort of a gradual influx of the more advanced vessels."

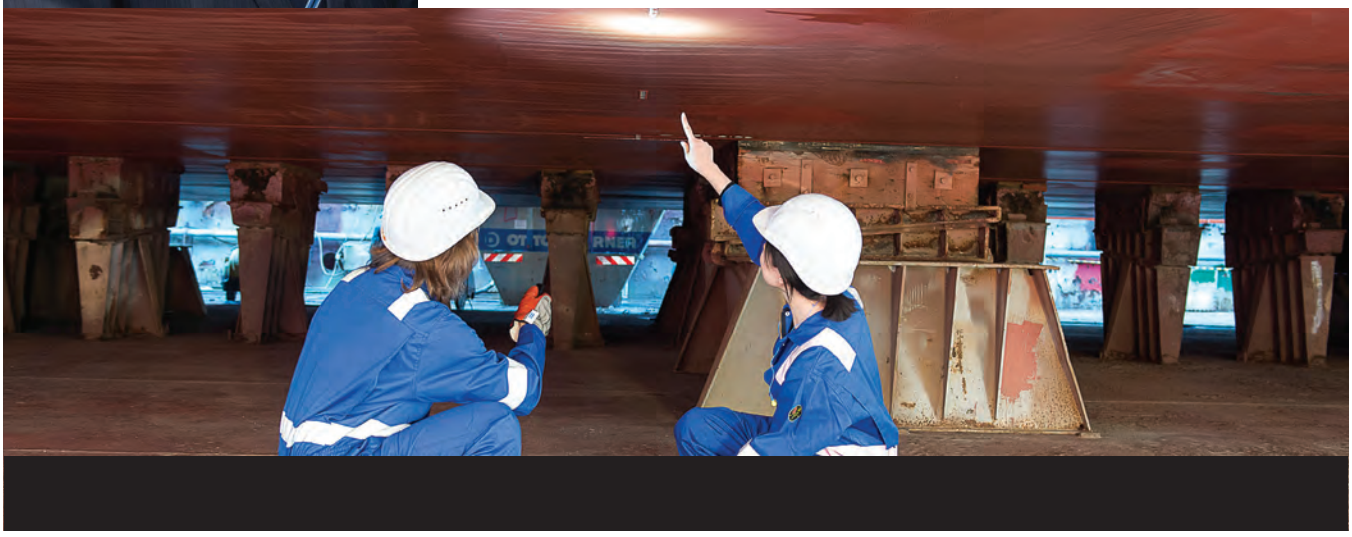
Adding to that pain, low freight rates prevent shipowners from affording new technology, and they're not in a hurry to do it, either. "Exactly," says Ørbeck-Nilssen. "And you also have an influx of the requirements on the ship owners and managers like ballast water, sulfur cap, etc. So everything will be gradually progressing, more than taking great leaps. But, you know, in certain segments, you will see some pretty brave steps forward and especially those segments where there is still money to be earned, or where there is still a good opportunity to differentiate, and the cruise industry is naturally one of those where there will be quite significant steps to be made."

One area in particular where these niche applications will eventually become mainstream, says the IACS CEO, is the use of LNG as a fuel. Whereas in the early years, this was thought to be feasible only for point-to-point ferries, now, it has gradually transformed into the offshore sectors and then, into the bulk, container and cruise sectors. Ørbeck-Nilssen thinks that's only going to continue. "With the current environmental regulations, operators have to look for alternatives to heavy fuel oil. And that's what's coming next." And, batteries likely won't be far behind.

Ultimately, it is an exciting time for the maritime industry, a challenging era and one that Ørbeck-Nilssen embraces. "I sometimes say that we are facing tectonic shifts in both the markets regulations and technology, and that's where I think, really, if you are innovative, if you are looking for new ways of doing your business, it's a high likelihood that you will gain that competitive edge. And that's why I say in these times everyone should thrive on change, because it's a lot of change coming your way, whether you like it or not."

Many people ask me whether we will see a revolution and I say, 'No, I don't think there will be a revolution – there will be a transformation, a gradual transformation.' And it's really to do with the current market situation. Basically, there are enough vessels on the water today, so ordering will be limited for – it's difficult to say – but at least for the next three to four years. So there will be sort of a gradual influx of the more advanced vessels."

– Knut Ørbeck-Nilssen, CEO of DNV GL Maritime



AT WORK AT DNV GL

As he returns solely to his day job at DNV GL in late June, Ørbeck-Nilssen will oversee more than a few exciting changes in his shop. For example, his classification society is this year putting in place what he calls a 'Smart Survey Booking tool' for customers. Traditionally, class has supported customers by having surveyors in different ports around the world. In a nutshell, it can eliminate multiple visits to a vessel in a given year, with better understanding of multiple survey items, most of which can be taken care of in just one or two inspections.

"By doing that, we reduce the number of times we visit you on board, we make your operations more effective, and we also help you to choose the best ports for your operation to carry out the surveys. And that, I think, is really a smart survey booking," explains Ørbeck-Nilssen.

The new initiative is emblematic of what DNV GL is trying to become. Sure, the Smart booking Tool will reduce the physical footprint needed to get the job done, but it also provides the same or better coverage. Having capable surveyors in the right ports also reduces travel expenditures and ultimately entails a much more efficient way of doing business. Knut Ørbeck-Nilssen finishes up the conversation as he also nears the finish line at IACS by declaring, "I said we had to challenge the status quo, and we really had to look at new and smarter ways of delivering service. And it's not about saving money, it's about being more efficient and delivering a better service, and I think that has always been the target of DNV GL."

Busy Ports Drive Industrial Real Estate Demands

As eCommerce fuels cargo growth, imports are booming and U.S. ports are bracing for the influx.

By Kevin Turner

With the explosive growth of eCommerce and strong consumer confidence, the nation's busiest ports are seeing a steady rise in the volume of imports, demand for industrial real estate, and the need for the modern logistics that can adequately facilitate speed and efficiency.

Last year, a record setting total of over 20 million inbound loaded containers reached the 13 major terminal ports across the United States, and the total volume of imports was up 7.6 percent. That pace won't taper off anytime soon, and considering indicators like the steady rise of retail spending, record high levels in consumer confidence, and the increase in GDP seen in 2017, major U.S. ports have no choice but to evolve.

It's not just consumer demand that is driving this boom in imported goods. As ports embrace automation and become more accessible to accommodate the influx of products, larger ships with significantly more cargo capacity can now use some U.S. ports for the first time. Major metropolitan and coastal ports across the U.S. are seeing greater import volumes in part because ports are making enhancements to the physical infrastructure of their harbors.

Evolving Supply Chains Start on the Docks

Some ports are getting deeper. The Savannah Harbor Expansion Project for example is halfway through a $973 million expansion project that is deepening its water levels. Last year cargo volumes topped 4 million container units at this port for the first time, and the dredging of the 8-mile outer harbor will

now allow 14,000-TEU ships to transit the Savannah River. Similar dredging projects are underway along the east coast from the Port of Charleston to the Port of Virginia/Norfolk.

From the east to west coast, bridges are also getting higher. Last year, the Bayonne Bridge, which is the key entry point for the Port of New York and New Jersey, reopened with an increased clearance of 64 feet, and the Gerald Desmond Replacement Bridge in Long Beach, CA, plans to increase clearance by 50 feet when it opens later this year. These infrastructure upgrades mean massive cargo ships that call on European or Chinese ports, and carry 15,000 to 18,000 TEUs, can now feasibly call on the Americas as well.

But what do these ships do with 18,000 TEUs of cargo once they arrive at the port? When a large ship with thousands of containers pulls into a harbor, the ship needs to unload products efficiently onto the dock. Landside operations are equally important, as seaside infrastructure upgrades are phased in, and the unprecedented increase in imported products is driving ports to embrace modern dock enhancements that allow for more cargo to come ashore.

In Long Beach, CA, for example, the Middle Harbor Redevelopment Project is a multi-year $4 billion capital improvement project that is bringing automation to terminals, creating deeper berthing areas, increasing land area for undocked container storage, and creating a more efficient on-dock rail yard to transport goods out of the port. The Long Beach Container Terminal is fully automated with dual transaction gantry cranes, autonomous vehicles to unload containers into cargo piles, and automated check-outs.

These upgrades are making the process to unload large cargo ships easier, and the logistics are also improving for rail operators and truck drivers who are the next point of contact in the supply chain.

Set to begin next year, the port of Savannah is pursuing a $128 million rail project that will allow shippers to complete deliveries to inland destinations at least two days faster. The upgrades will add 97,000 feet of new track and expand rail operations to 18 working tracks at the terminal. When complete, the terminal will double rail lifts per year from 500,000 to 1 million and, if successful, cut the total dwell times in half to 24 hours.

The story is similar for trucking at the Long Beach Container Terminal. Drivers can now get in and out within 38 to 40 minutes. Time is money for dray drivers, and when the average transaction for a non-automated terminal is 90 minutes, this logistical efficiency is an attractive alternative.

Data Sharing

The harbor is also adopting a data-sharing system to improve its cargo flow and react more dynamically to the many points of contact along the supply chain. The shipping industry has essentially been in the dark ages for the last ten years, and we are finally coming out of it with technologies like cloud storage and blockchain that allow greater visibility and accountability.

The port industry has traditionally relied on antiquated manual entry systems, and many major ocean carriers and 3PLs still rely on fax machines. Simply put, fax machines cannot support the numerous handoffs required across a vast and complex supply chain. That's because it's not unusual for an inbound product to go through 30 different transactions from the time it leaves the factory to the final delivery point. A product must go from a factory, to a truck, to a dray driver, and onto an ocean carrier. The cargo is then unloaded, transloaded, put on a stack train, picked up by another transportation entity, shipped to a warehouse, and sent to a redistribution center before it reaches a retailer or a person.

Blockchain is changing industry standards and will allow stakeholders to collaborate, see transactions in real time, and, most importantly, prioritize packages and products at any point along the supply chain. Imagine that a retailer unexpectedly finds that a certain character toy for the Holiday season is incredibly popular and is selling out well before the holidays. With blockchain, a supplier would be able to quickly identify containers and pull shipments of those toys that are already in transit and place them into an expedited shipping process, like the peel-off program that launched in 2015 at the Port of Los Angeles. The toys are then rapidly deployed to a fast-moving goods distribution center and sent directly to stores or online customers in time for the holiday.

Industrial Real Estate: a critical way to provide speed to market

Speed and efficiency are essential to the future of this industry, and, while blockchain is a trend to watch for, speed to market is driving a more immediate trend as well.

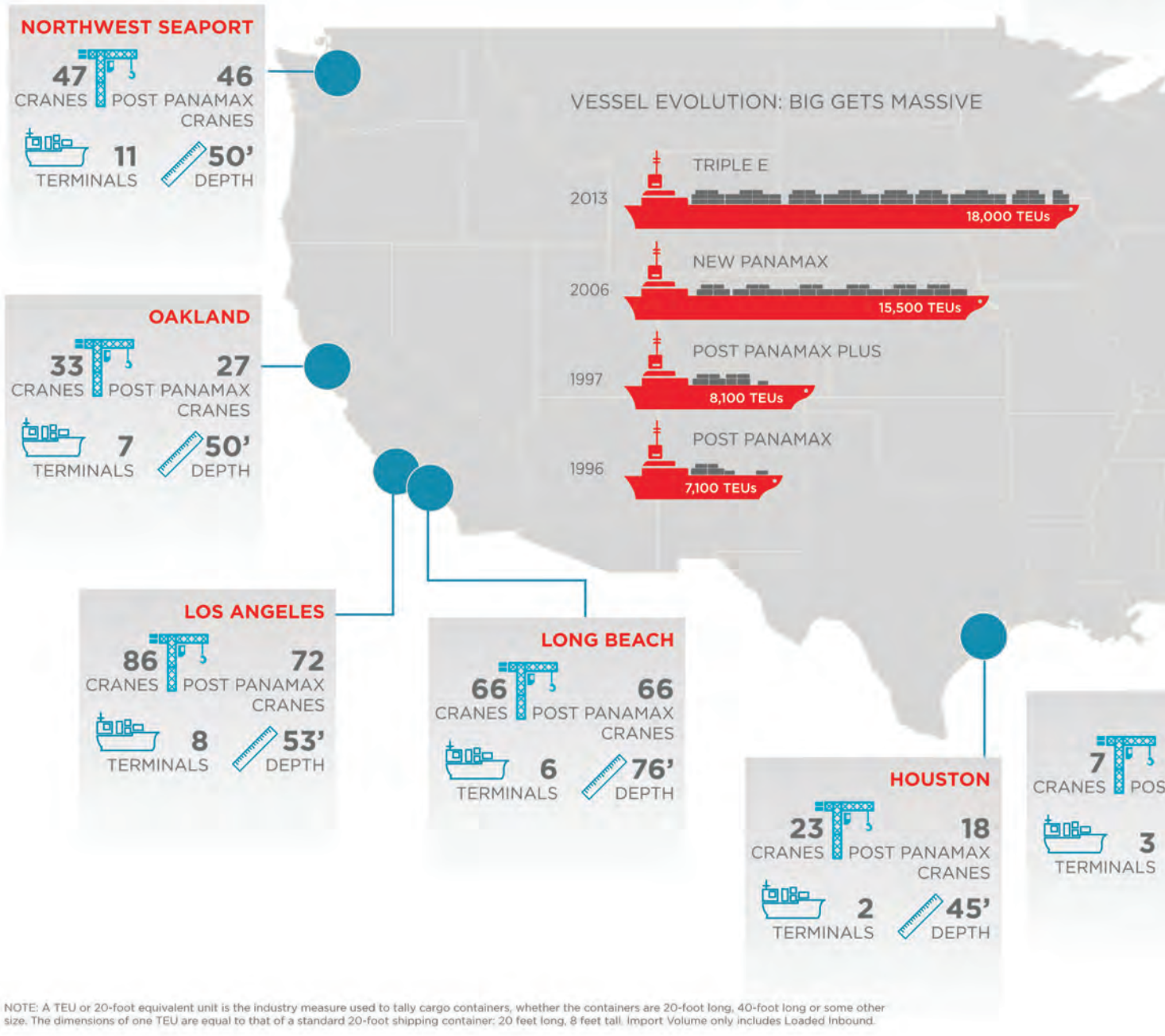
Demand for industrial real estate near high traffic ports like Los Angeles and Long Beach and New York and New Jersey is skyrocketing. Imports to each region rose by 7.41 percent and 6.05 percent respectively from 2016 to 2017, and because a significant amount of this cargo must be transloaded, and suppliers want to increase efficiency and reduce transportation costs, vacancy is going down and rents are going up.

For the Ports of Los Angeles and Long Beach, much of the

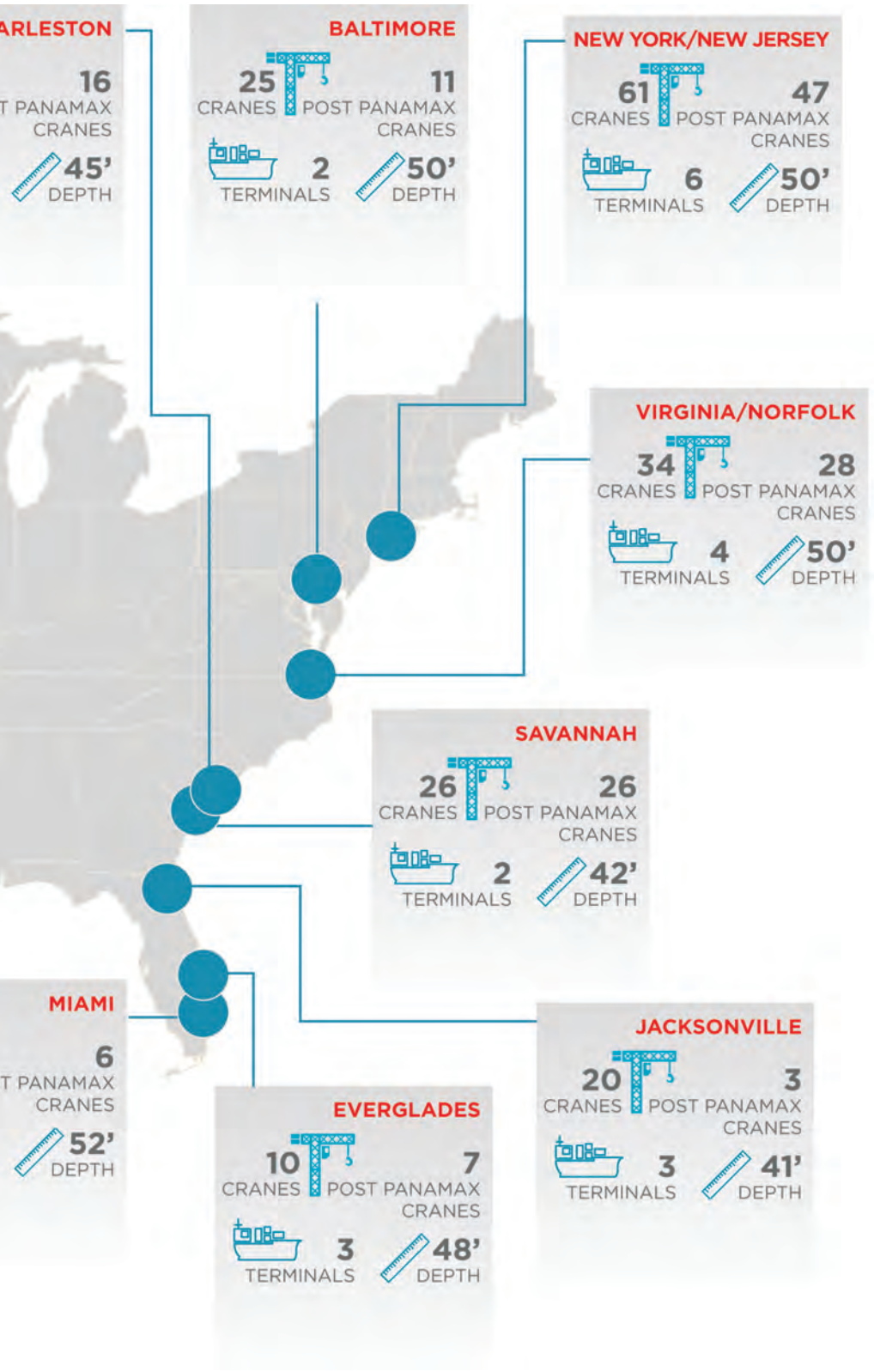
Top U.S. Seaport Markets at a glance …

Miami, FL	LA/Long Beach (Orange County & Inland Empire)	VA (Hamptons Road)/Norfolk
Houston, TX	New York/New Jersey (Central & Northern NJ)	Port Everglades (Fort Lauderdale)
Baltimore, MD	Northwest Seaport Alliance (Seattle & Puget Sound)	Charleston, SC
Jacksonville	Oakland, CA, (East Bay - Oakland & Contra Costa)	Savannah, GA

TOP U.S. SEAPORTS



NOTE: A TEU or 20-foot equivalent unit is the industry measure used to tally cargo containers, whether the containers are 20-foot long, 40-foot long or some other size. The dimensions of one TEU are equal to that of a standard 20-foot shipping container: 20 feet long, 8 feet tall. Import Volume only includes Loaded Inbound.



cargo traffic flows to the Los Angeles Basin, Orange County, and the Inland Empire. This market posted a vacancy rate of just 2.2 percent last year and a rental rate of $9.60 psf. For the Port of New York and New Jersey, the surrounding Northern and Central New Jersey industrial market saw vacancy dwindle to an historic low of 3.8 percent while posting rental rates of $8.15 psf. When compared to the U.S. industrial market overall, which recorded vacancy rates of 5.1 percent and rental rates of just $5.84 psf, the demand for industrial real estate in these port markets is evident.

Demand by companies for this space will persist because of the increasing pressure on timed deliveries, and, as a result, cargo-handling improvements that reduce congestion and modernize warehouse infrastructure are in the immediate future for major U.S. seaports.

The Port Authority of New York and New Jersey is currently implementing a state-of-the-art gate system that is expected to decrease the average trucker turn time by 25 percent, while the Port of Los Angeles is developing an 80-acre container terminal support facility that will support container peel-off operations and expand holding space for chassis and truckers.

For the Ports of Los Angeles and Long Beach and Port of New York and New Jersey, these and other ongoing enhancements will allow facilities to keep pace with the influx of product that will continue to flow through terminals and the demand by suppliers to transload products into the surrounding region.

Ultimately, the markets for the top U.S. seaports are expected to remain strong, and port enhancements across the U.S. will continue to be a critical investment for successful supply chains.

The Author

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Bulk Shipping:

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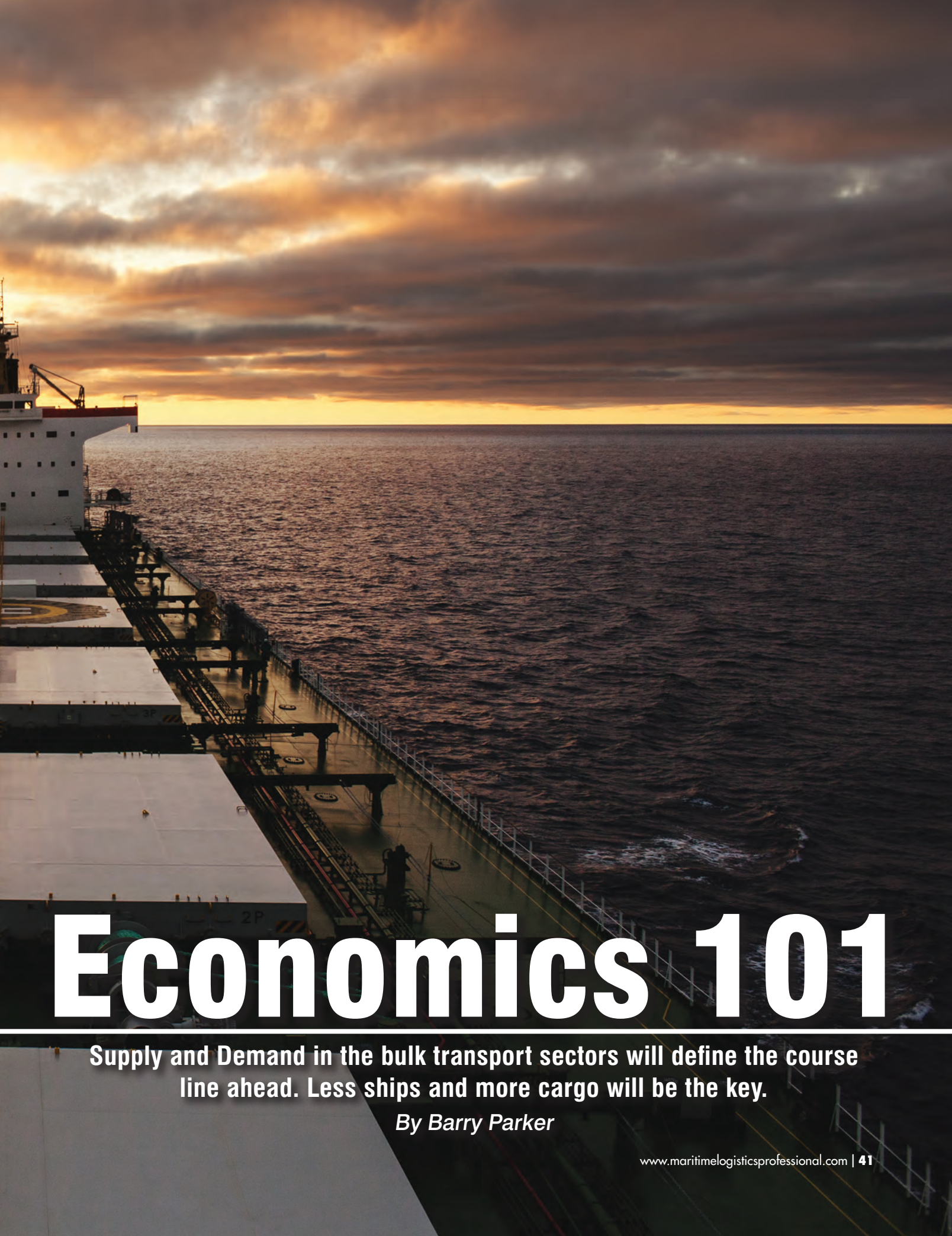

Economics 101

Supply and Demand in the bulk transport sectors will define the course line ahead. Less ships and more cargo will be the key.

By Barry Parker

The drybulk sector

– where iron ore, coal, grain and other raw materials dominate – is still wrestling with a decade-long hangover that began with the financial collapse of 2008. A recovery ensued in 2010 and 2011, but, following the time honored trade pattern, the brighter outlook brought about an avalanche of new build orders and another drop in rates ensued. The pattern, with cycles each extending approximately three to four years in duration, repeated in 2014 – when a slightly stronger market sowed the seeds of its own demise … yet again.

Volatility, brought about by the intersection of demand and supply, has been a hallmark of the drybulk markets; indeed, market observers looking back see the boom of 2003 to mid-2008 as corresponding with the peak of a "commodity super cycle." Prior to that, the last super cycle peaked circa 1980, and before that, during the 1950s. Over time, commodity demand predictably ebbs and flows. And, while recent years have seen growth, these gains have albeit come at a slow pace, and have been no match for the robust increase in both numbers and tonnage associated with sector newbuilds.

Sentiment Brightening

Regardless of commodity demand, it is the supply side – the global fleet – that continually sees overbuilding. Because ships have a useful life of 20 to 25 years, they will be around – cluttering up the market, for multiple trips through the economic cycle. So it went in 2016 and into early 2017, when widely followed indices of drybulk market health saw record lows. That said, in mid 2018, the outlook is brightening.

Indeed, optimism is returning to the beleaguered market, according to the latest Shipping Confidence Survey from Moore Stephens. The London, UK-based international accountant and shipping adviser reported that "Shipping confidence reached a four-year high in the three months to end-February 2018" based on a periodic survey of market participants, with an emphasis on intentions to make capital investments. Mr. Richard Greiner, Partner at Moore Stephens, adds, "Net freight rate sentiment is positive in all main tonnage categories … it increased both in the drybulk and container ship trades."

'Shipping Confidence' is one thing, but these expectations can be quantified. London's Baltic Exchange, which produces extensive data on drybulk hires and freight, looked at the market for forward physical freight, saying in a late March edition of its Bulk Report, "Period rates were still being agreed at numbers considerably higher than spot values. The ***New Orleans***, a Capesize bulker of 180,960-dwt, built in 2015, fixed to charterer SwissMarine for 11 to 13 months trading with 25 March delivery China at $21,000 daily, with other well-described ships having achieved similar levels."

Conversely, spot hires for Capesize ships in early March were around $12,000/day, so a savvy charterer willing to take on a vessel at a daily hire of $9,000/day above spot levels shows considerable optimism. Or, if you are a pessimist, it arguably shows desperation, a fixture on the wrong day, with the wrong options and other parameters.

Where are we in the cycle?

Earlier this year, Barry Rogliano Salles, a shipbroker based in Paris, with a worldwide office network, pronounced the drybulk market, as having entered a "long-awaited recovery." For their part, they offer, "After the record lows of 2016, expectations for a better shipping market in 2017 emerged from the beginning. As usual, the Capesize sector closely followed developments in the commodity markets. In particular, higher iron ore prices encouraged miners to ship as much material as possible, as soon as possible, and this created inflationary pressure on freight. With spot cargoes deep in the money, shippers were content to pay a few cents more to secure prompt ships."

Vessel hires rebound in 2017

Maritime Strategies International (MSI), London (UK) based freight market analysts, writing in the March edition of its *Dry Bulk Freight Forecaster*, said, "Slow fleet growth and stronger demand will support earnings this year. We're forecasting an increase of between 17% and 28% for spot earnings across all bulker benchmarks by May." But, analysis of spot hires (on a timecharter basis, which is net of fuel and port costs) by MSI shows that Capesize vessels (typically 180,000 dwt) were earning $14.5 k/day and $11.5K/day in January 2018 and February 2018 respectively. Clarksons and Baltic Exchange data show the March spot hires noted above, working back to around $12.0k/day. In contrast, 2017 Q4 was far stronger, with hires of $19.8k/day (Oct.), $21.3k/day (Nov.) and $25.6k/day (Dec.). So, which direction is the market heading?

Addressing that pressing question, MSI also looks closely at other drybulk size categories. MSI's lead drybulk analyst, Will Fray, insists, "At the end of February daily Panamax earnings pushed above Capes and have remained above Capesize earnings so far in March." The end February 2018 hires, nearing $12k/day, compare with a high of around $12.7k/day reached in December, 2018. On the smaller sizes, Fray adds, "Strong support is expected from minor bulks trade this year and MSI is forecasting Supramax earnings of $12.0 k/Day in May and $11.7 k/Day in August."

Supply and Demand

Positive views stem, in part, from a tighter supply situation – the rate of expansion for the overall drybulk fleet is way down from previous years (and possibly less than increases in demand, in certain sectors). On a drybulk themed panel, at Capital Link's Shipping Forum in mid-March, Mr. Stamatis Tsantanis, the CEO of Seanergy Maritime Holdings, an owner of 11 vessels, including nine capsize bulkers, said: "There is very limited shipbuilding capacity … to build additional ships … in many countries, like China, they have consolidated some of the bigger yards." He added that yards in South Korea are

The New Orleans, a Capesize bulker of 180,960-dwt, built in 2015, was fixed to charterer SwissMarine for 11 to 13 months trading with 25 March delivery China at $21,000 daily.

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Net freight rate sentiment is positive in all main tonnage categories … it increased both in the drybulk and container ship trades.

– Richard Greiner, Partner at Moore Stephens

Credit: Capital Link

With recent price increases from yards, these will not make financial sense to build … I am not sure that the VLOC [Very Large Ore Carrier] orders that we see now will eventually be realized.

– Stamatis Tsantanis, CEO of Seanergy Maritime Holdings

Economics 101, demand and supply. We either need more tons to move or we need to shrink the barge fleet. Preferably both.

– Peter H. Stephaich, Chairman and CEO of Campbell Transportation Company

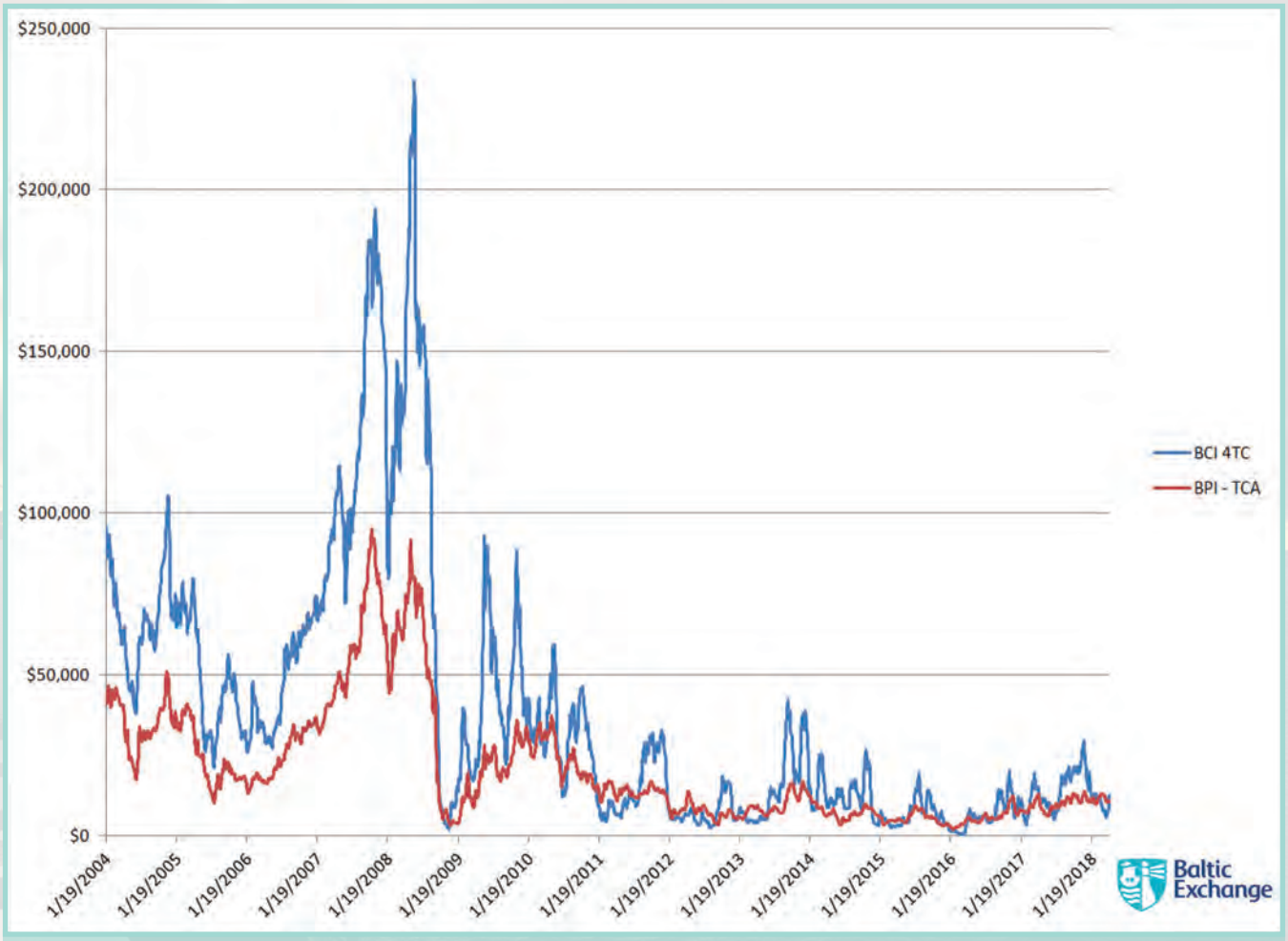
now under court receivership. Importantly, and addressing concerns about a large group of newbuild orders tied to the Brazilian miner Vale (representing a potential overhang on the market), Mr. Tsantanis said: "With recent price increases from yards, these will not make financial sense to build … I am not sure that the VLOC [Very Large Ore Carrier] orders that we see now will eventually be realized."

Stakeholders often look closely at ships on order as a percent of the existing fleet size. Analyst Randy Giveans, who runs Equity Research-Maritime at investment bank Jefferies & Company, presented data (originating from Clarksons Research) at the Capital Link conference showing the orderbook/ fleet ratio hovering around 10% in early 2018, compared to 80% at the height of the market in 2008. His data also showed the spike in newbuild order activity during 2013-2014 was followed by a lull (corresponding to the market's drop) in 2015 and 2016.

On the demand side, the researchers BRS said that "Chinese steel output grew by a strong 6% to 832 million tons." This had positive implications for iron ore movements (the leading drybulk mover) with BRS noting that "Overall, Chinese iron ore imports grew by 6% to 1,075 million tons…" adding that the two major originators of iron ore exports both saw double digit gains from 2016. Australia, with overall iron ore shipments of 839 million tons, was up to 25% from the prior year, and Brazil- with 384 million tons overall, also up by a similar amount.

Financials, 'Black Swans' & Logic

The fair winds pushed by market experts have also begun resonating through to the financial arena. In early April, Evercore ISI analyst Jon Chappell wrote, "For the first time in more than two years, we can begin to value dry bulk stocks on estimated cash flows, rather than net asset value (NAV), as spot rate improvements drive meaningful cash flow acceleration." As markets improve, analysts look at company earnings, rather than simply the value of the steel (a downside protection if a company were to liquidate its assets). Chappell added, "We believe ongoing rate improvements and sustained earnings growth will provide some confidence in the cycle, driving multiple expan-



Daily Hires [$/day] for Capesize and Panamax Drybulk Vessels / Blue = Capesize Hires / Red = Panamax Hires

sion (on top of further cash flow acceleration) leading to 30-40% upside across the stocks in this sector in the next 12 months."

At a conference hosted by Morgan Stanley, a few days after the Capital Link event, Mr. Hamish Norton, the President of SBLK, was asked about ways that investors would value shipping companies. His answer revealed how the answer changes, depending on where the market sits in terms of the longer term cycle. Mr. Norton (who came from the investment banking side of the business) said: "At the market trough, investors will look at Net Asset Value (NAV) as a base for valuation. As the market improves, institutional investors will look to value companies based on Enterprise Value (EV)/Earnings Before Interest-Depreciation-Amortization (EBITDA). Near the peak of the cycle retail investors will value companies based on dividend yield (Dividend per share/ Share price)."

One thing is for sure: there are many moving parts to the current bulk trading cycle. The specter of a trade war precipitated by the threat of steel tariffs – a 'Black Swan' event if there ever was one – is an unwanted addition to that mix, and in the end, could make all of the analysis moot. In the end, however, global bulk shipping's future health may hinge one piece of savvy advice – interestingly enough, provided by an operator of inland dry bulk barges in the heartland of America.

Peter H. Stephaich is Chairman and CEO of Blue Danube Incorporated and Campbell Transportation Company. In a September 2017 interview, ***MarineNews*** editor Joe Keefe asked, "What will it take for freight rates to improve on the inland rivers?" Stephaich answered simply, "Economics 101, demand and supply. We either need more tons to move or we need to shrink the barge fleet. Preferably both." When it comes to global dry bulk shipping, that sounds just about right.

The Author

Barry Parker

Parker of bdp1 Consulting Ltd provides strategic and tactical support, including analytics and communications, to businesses across the maritime spectrum. The company can be found online at www.conconnect.com

Bulk Shipping: *The Trump Impact*

Political risks: these are the bane of industry forecasters because of their unpredictability and, by definition, uncertain consequences, are omnipresent, with the potential to quickly impact trade flows. Addressing perhaps the biggest political variable in more than four decades, Mr. Rahul Sharan, lead drybulk analyst at Drewry, offered a carefully worded view of the impact of newly announced U.S. steel tariffs on drybulk shipping, with a focus on the Handymax and Supramax sizes predominating in the movements of finished steel products.

In an OP/Ed published in March 2018, Sharan opined, "President Trump's decision to slap a 25% tariff on steel imports might not be all bad news, as alternative trading patterns could lead to an increase in tonne-mile demand." This analysis was published just prior to the early April tariff bombshells being lobbed back and forth between Washington, D.C. and Peking.

Mr. Sharan elaborates, in the Drewry analysis: "Overhauling trade routes to and from US will have ripple effects on dry bulk shipping. If events go according to Trump's plan, then dry bulk shipping will lose 32 billion tonne-miles of steel demand. Half of all steel products move in dry bulk carriers, so a decrease of 13 million tonnes of steel imports would mean a loss of 6.5 million tonnes of dry bulk cargo."

However, Drewry offers the potential for a silver lining, for Handy and Supramax size vessels – the workhorses of the steel trades. Mr. Sharan suggests that: "Steel volumes from all trade partners apart from Canada and Mexico would suffer. Even without an increase in Canada and Mexico's share of US imports, more than 100 Supramax shipments a year would be lost. If other countries lose business to the NAFTA pair, the impact will be even heavier.

Then there are the effects of any retaliation. These are more difficult to quantify, as the measures exist only as threats so far and the commodities involved would be varied. In some cases, ship operators could benefit. For example, China is planning to import soybean from Brazil and Argentina instead of the US as a protest against the steel tariff, which would mean a substantial increase in tonne-miles."

Speaking at the Morgan Stanley conference (two weeks prior to the "Trade War" talk), Robert Bugbee, the President of Scorpio Bulk Carriers, said: "A trade war would have more immediate and detrimental effects on the containership industry than on dry bulk."

Following the Trump/ China volleys, analysts added necessary qualifications to their views. Jon Chappell, the Equities Analyst at Evercore ISI, cautioned investors, saying "…the segment now faces some uncertainty regarding a potential Trade War, and equity investors have been quick to protect the downside before any clear conclusions can be drawn. We do not pretend to know where the trade tariff bluster will ultimately end up and what impact it may have on global dry bulk trade, but we do know that absent political meddling the capacity expansion outlook for this sector sets the market up very well for continued strength." Analyst Randy Giveans, who follows shipping stocks at Jefferies & Company, took a neutral view. Writing in the midst of the jousting, he said "Although this news has been generally perceived as negative for shipping, we believe the impact on ton-mile demand could be minimal as Chinese imports and US exports will not cease, but rather switch to new trade routes/destinations, further dislocating the global shipping market."

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BIMCO Report Names Top 3

When it comes to bulk shipping, there is arguably too much attention given to the ships themselves, the cost of freight in the daily Baltic Index, and perhaps not nearly enough given to the quality and performance statistics of the world's bulk handling terminals. BIMCO, now the world's largest international shipping association, with more than 2,100 members globally, aims to change all of that. To that end, their latest terminal vetting effort has produced the names of the three best performing dry bulk terminals in the world. These include Santander and Bilbao in Spain and Quebec in Canada, according to *BIMCO's 2017 Dry Bulk Terminals Vetting Report*.

Santander was rated first in all four major categories: terminal handling of loading/unloading; terminal mooring and berthing arrangements; information exchange between the ship and the terminal and terminal equipment.

BIMCO launched its Dry Bulk Vetting of Terminals scheme on 19 January 2015. The vetting scheme asks shipowners to complete a questionnaire after visiting a terminal. The answers received are used to create a database on port/terminal practices that will be used for statistical purposes and rating of terminals. The collected data gives a quick overview of the dry bulk terminal's performance. It can be used as guidance for planning future calls at terminals around the world. Shipping companies will, for example, be able to find out if other ships have experienced damage, difficulties or surges at a particular terminal.

The report evaluates terminal and port performance from around the world to improve safety standards and the turnaround time of ships calling ports. The results provide an insight into what it takes to be a "good bulk terminal," but BIMCO admits that it still needs more reports from members to establish better ratings and statistics, and to show a more robust picture of the current standards at terminals around the world. This is the second issue of the report and the data covers the period from January 2015 to December 2017. ***By the Numbers, the report looks something like this:***

Some Ports: "well below standard"

At the other end of the spectrum, a number of ships complained of a lack of language skills when visiting certain ports; permanent pressure on ship/crew and master; unexpected claims; and unnecessary bureaucratic and offensive port authorities. In addition, ports rated badly when the cost of terminal services was either too expensive or the service was non-existent.

Overall, BIMCO's ratings spanned between excellent to poor, with scores based on a weighing system where loading and unloading had the highest weight followed by mooring and berth arrangements and information exchange. Once the score has been calculated, it will be converted into a star rating:

- *Five stars: Excellent – The standard of the services, equipment and/arrangements was excellent and entirely safe. It would serve as an example of best practice for other terminals.*
- *Four stars: Very good – The standard of the services, equipment and/arrangements was of a high quality*

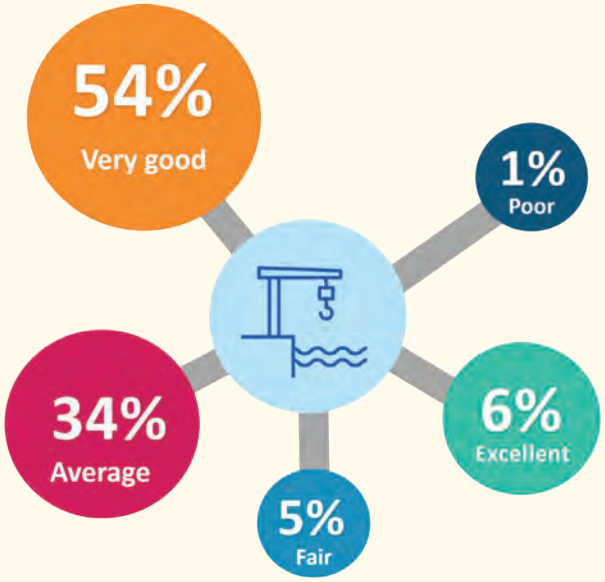


Figure 3: Rate the way the terminal handled the loading/ unloading

11: Increase in Ships Participating in this Report	115: Ships Participating
27: Terminals Having Five or More Report Entries	155: Additional Reports in 2017
35: Percent Increase in Number of Total Reports	279: Number of Different Global Terminals
80: Countries Included in the Scheme	598: Reports Provided
93: Percentage of ports viewed as average or better	1000: BIMCO's Goal of Participating Ships

Performing Bulk Terminals

and always safe to the ship and/or crew.

- *Three stars: Average – A typical standard of terminal with the ship experiencing both good and bad. However, in general, the services, equipment and/arrangements were safe and overall met expectations.*
- *Two stars: Fair – The standard of the services, equipment and/arrangements was below average and in some areas, safety needs to be improved.*
- *One star: Poor – The standard was unacceptable or unsafe for the ship and/or crew.*

Warnings will be shown if the terminal has received poor ratings as will praise if the performance has been rated excellent. This year the lowest weighting was given to terminal equipment and services.

Conclusion

The report comes with caveats. Even with the substantial increase in participating parties, to date there is insufficient data to draw solid statistical conclusions and make substantiated statements on dry bulk terminals and their performance. Nor can BIMCO express anything definite with regard to trends, and there was insufficient foundation for drawing conclusions on geographical or regional differences. The report does indicate a generally high standard of dry bulk terminals with a good or excellent overall performance, as well as the quality of the terminals and equipment.

BIMCO invites more ships to submit reports. More reports will ultimately help to create a better tool for offices in the process of fixing cargoes. It will also enable BIMCO to act whenever poor performances are reported at a dry bulk terminal. Future plans, beyond achieving at least 1,000 participating vessels, include communicating with terminals and other stakeholders with the aim of improving procedures and best practices. Moreover, BIMCO also insists that if they receive more results, which are deemed unacceptable or unsafe for the ship and/or crew, that the organization will take action to encourage terminals to make improvements.

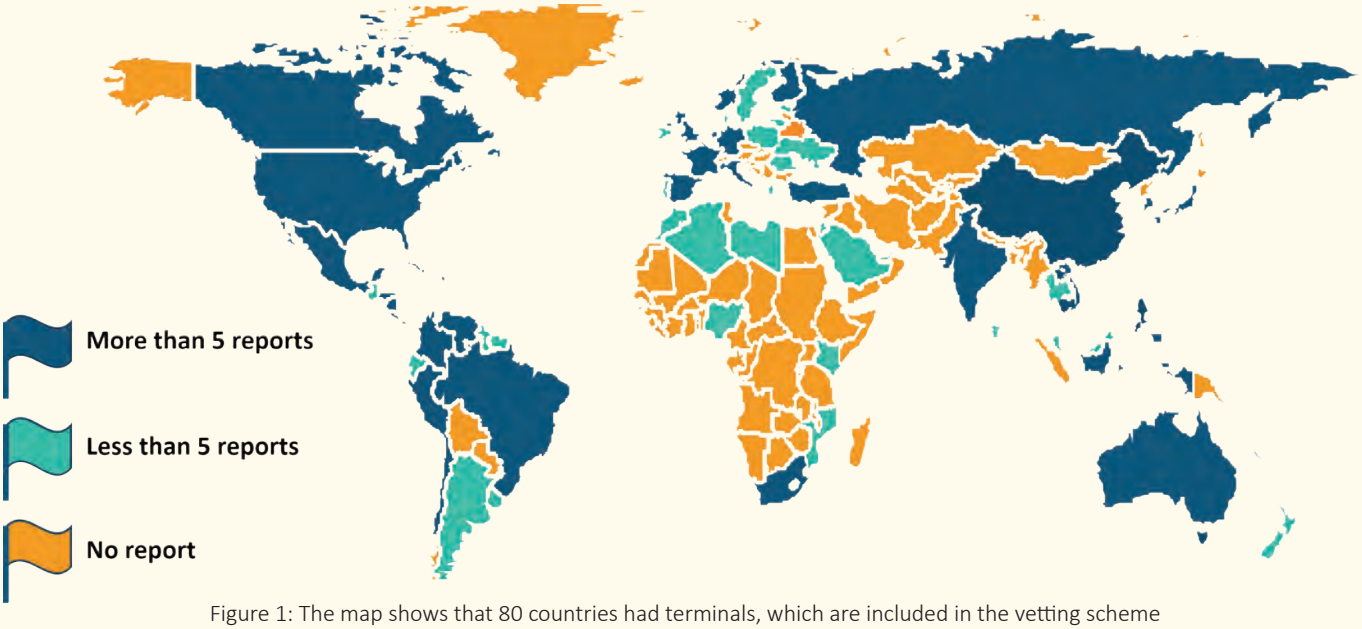


Figure 1: The map shows that 80 countries had terminals, which are included in the vetting scheme

BIMCO plans to publish this report annually. The current ***BIMCO Dry Bulk Terminals Vetting Report 2017*** is available free of charge to download at: www.bimco.org.

The vetting reporting scheme can be found at:
www.bimco.org/web/Dry_bulk_terminal_vetting

FOR THE GREATER GOOD:

BIMCO's Peter Lundahl Rasmussen weighs in on BIMCO's high tech measurement tool for shipping Key Performance Indicators.

In June of 2015, BIMCO took ownership of the unique Shipping KPI System from industry trade organization InterManager. In February of this year, BIMCO relaunched the ship benchmarking system Shipping KPI, after two years of redesign. The system helps shipowners and managers make strategic decisions about their fleet, compare their ships' efficiency against the performance of the industry and sector averages. The Shipping KPI System is unique because it is based on a standard of 64 different performance indicators (such as ship unavailability and number of environmental related deficiencies) to allow the most specific and accurate comparison of ships – within each sector and more broadly across the industry – that is currently available.

The data collected is anonymized, so it does not compromise commercially sensitive information.

BIMCO provides the Shipping KPI System free of charge to its members (aside from a nominal set-up fee for new users), and additionally runs the tool for the entire industry on a not-for-profit basis, focusing on the value of the tool for the industry. Initiated in 2003, the system was developed by a cross-industry group of experts, led by InterManager – the international trade association for the ship management industry.

Today, BIMCO's Head of BIMCO Maritime Information Department, Peter Lundahl Rasmussen, is responsible for and has led the BIMCO Shipping KPI project since 2015. A master mariner with extensive seagoing experience gained on board chemical and oil tankers trading worldwide, his career path included a period as 'Fleet Director' from 2007 to 2009, during which time he was responsible for the safe operation of some 25 ships. In this edition, he weighs in on the significance of BIMCO's Shipping KPI projects, what it can do for you, and why that is important.

Shipping KPI was first launched in 2009. BIMCO acquired Shipping KPI from Intermanager in 2015. Why did BIMCO step in to take leadership of the project?

In 2013, BIMCO saw the potential in taking over the system as an added value to our members and that it would be a waste for the industry to lose the unique platform and the gathered data. BIMCO therefore decided to acquire the program from Intermanager.

BIMCO'S SHIPPING KPI

BIMCO has relaunched the ship benchmarking system – Shipping KPI – after two years of redesign. According to BIMCO, the system helps shipowners and managers make strategic decisions about their fleet. What kind of decisions are we talking about?

Shipping KPI users on can be assisted in making strategic decisions on the potential benefits for a change of Flag, Class, Crew, Officers, Training for crew and officers, Insurance, Ship age upgrade or recycling, just to name a few.

Why was the system 'redesigned?' What's different now? And, what's better?

BIMCO Shipping KPI 2018 Improvements include the following areas:

System & User security features added/improved	Ship Types aligned w/IHS STATCode Level 3
KPI Standard versioning allows conclusion of 2017 reports	Easy start up process for new users
Clearer and simplified PI/KPI/SPI definitions	Predefined KPI profiles (shiptype based)
Meta data for ship status (in service, laid up)	A more flexible benchmarking tool

The KPI profile was established in order for the users to have flexibility in choosing or selecting their preferred PIs and KPIs for benchmarking or monitoring. The system is set up so it will guide the user to select the PIs and KPIs that eventually will allow a benchmarking result, but the user can choose any KPI profile or create a customized KPI setup and there are no mandatory reporting requirements.

As with any technology tool, this one likely uses complex rules, algorithms and code to define parameters for ship owners and managers. Is this a risk-based tool or more of a commercial platform – or is it both?

It is both. The system allows the user, at their discretion, to grant access to third parties (potential charterers). The platform includes both a ship and fleet level where all reported data can be assessed in terms of performance in the following areas:

Navigational Safety	Health and Safety	Security	Environmental
Port State Control	HR Management	Technical	Operational

BIMCO has a goal of 'developing digital solutions for industry.' What else, beyond Shipping KPI is BIMCO at work on?

Just to mention a few products and projects, there IS the Smartcon and BIMCO's involvement in the EU EfficienSea II project. We are also looking into providing more BIMCO website information via Apps.

Shipping KPI is based on self-reporting by 300 companies and a total of 6000 ships. These are ships and companies currently in the system?

Yes, these ships and users are going back to when the Shipping KPI was initiated and the older data is part of the historic data allowing users to perform benchmarking over nearly a decade. It enables users to compare performance parameters between ships of similar type, tonnage, trades or flag states, while remaining anonymous.

What kind of parameters are we talking about? Charter rates, crewing nationality, safety?

Benchmarking filters includes:

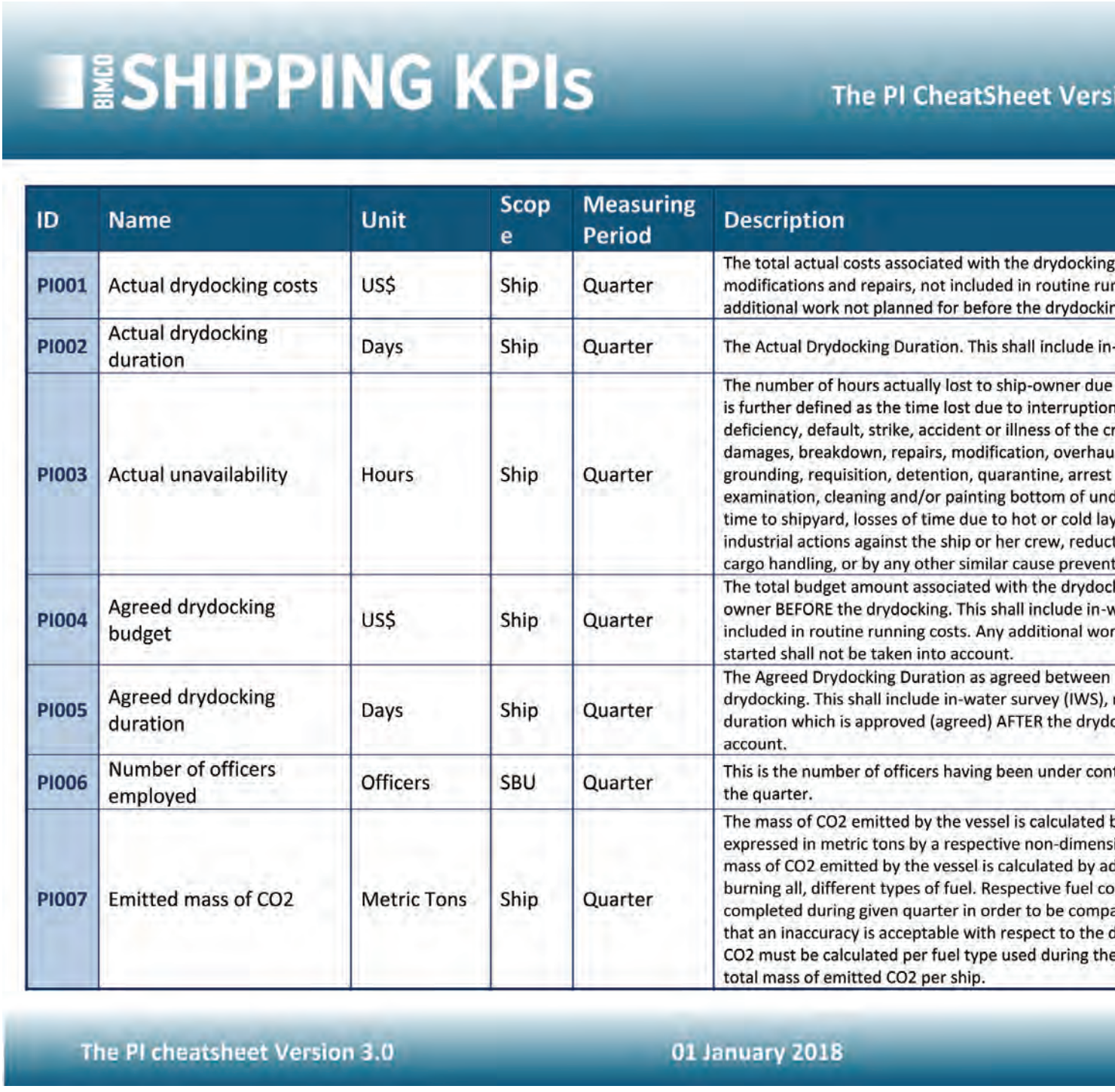
DWT	Entry into Management	Trading Areas
Year build	Nationality Senior Officers	Country Built
Flag	Nationality Junior Officers	Ship Status
P&I Club	Nationality Ratings	Ship Type (IHS)
H&M	All 33 KPI's (if desired)	Class Society

BIMCO's short term target is to get more than 10,000 ships into the system to create an even better foundation for comparison and analysis. How many operators and owners (representing how many ships) currently belong to BIMCO?

Around 80% of the Shipping KPI users are members of BIMCO. That amounts to about 5,000 ships enlisted by BIMCO members.

Shipping KPI is billed as a 'community tool.' What one big thing has (any) user found that helps them improve their bottom line and/or operating performance?

The most dominant reply on the beneficial outcome from the BIMCO Shipping KPI is related to the information about the performance of users' ships and getting a visual representation of how well or not the performance of a ship or fleet



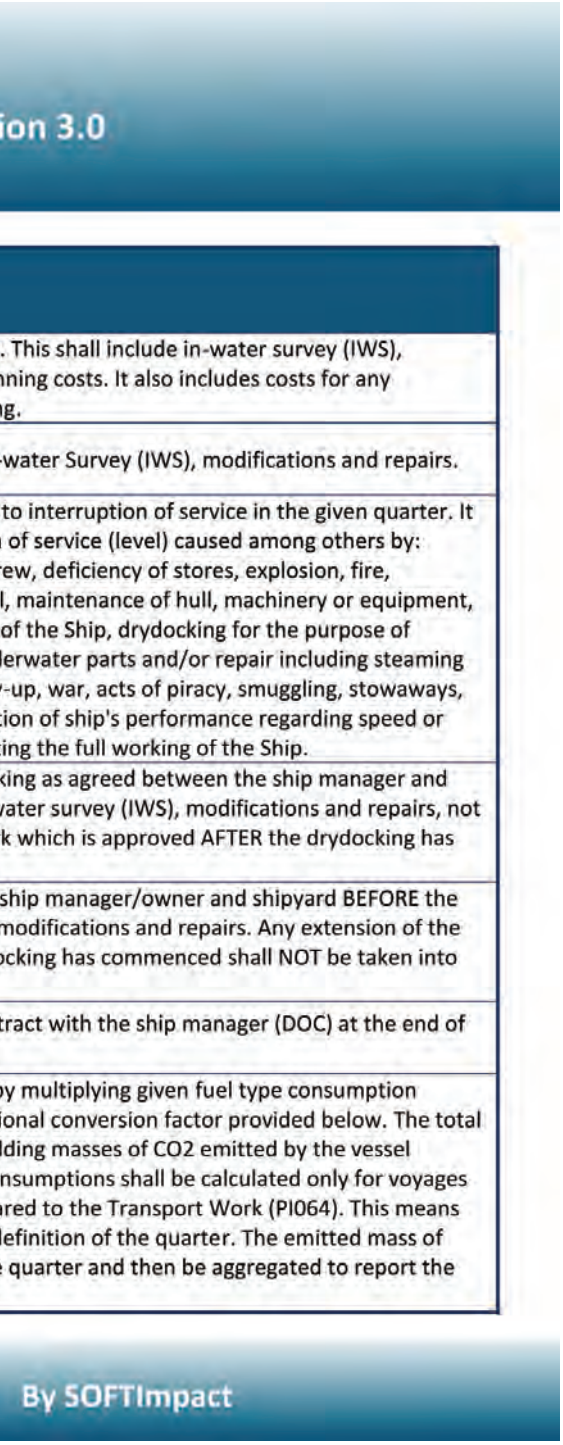
BIMCO SHIPPING KPIs

The PI CheatSheet Vers

ID	Name	Unit	Scope	Measuring Period	Description
PI001	Actual drydocking costs	US$	Ship	Quarter	The total actual costs associated with the drydocking modifications and repairs, not included in routine ru additional work not planned for before the drydockir
PI002	Actual drydocking duration	Days	Ship	Quarter	The Actual Drydocking Duration. This shall include in-
PI003	Actual unavailability	Hours	Ship	Quarter	The number of hours actually lost to ship-owner due is further defined as the time lost due to interruption deficiency, default, strike, accident or illness of the cr damages, breakdown, repairs, modification, overhau grounding, requisition, detention, quarantine, arrest examination, cleaning and/or painting bottom of und time to shipyard, losses of time due to hot or cold lay industrial actions against the ship or her crew, reduct cargo handling, or by any other similar cause prevent
PI004	Agreed drydocking budget	US$	Ship	Quarter	The total budget amount associated with the drydocl owner BEFORE the drydocking. This shall include in-w included in routine running costs. Any additional wor started shall not be taken into account.
PI005	Agreed drydocking duration	Days	Ship	Quarter	The Agreed Drydocking Duration as agreed between drydocking. This shall include in-water survey (IWS), duration which is approved (agreed) AFTER the drydo account.
PI006	Number of officers employed	Officers	SBU	Quarter	This is the number of officers having been under cont the quarter.
PI007	Emitted mass of CO2	Metric Tons	Ship	Quarter	The mass of CO2 emitted by the vessel is calculated b expressed in metric tons by a respective non-dimensi mass of CO2 emitted by the vessel is calculated by ad burning all, different types of fuel. Respective fuel co completed during given quarter in order to be compa that an inaccuracy is acceptable with respect to the d CO2 must be calculated per fuel type used during the total mass of emitted CO2 per ship.

The PI cheatsheet Version 3.0 01 January 2018

was at a given period. This allows users to track any trends in the ships or fleet performance and assess the reason or reasons for any changes in performance and thereby enabling the user to act accordingly. Further is the possibility for a user to compare the performance of different shipmanagers managing a ship or ships mentioned as a user benefits.



BIMCO has improved the reporting tool and made sure that the reporting values conform to IMO-rules and industry-standards. A lot of work has also gone into improving the user experience. Which IMO rules and industry standards are we talking about?

All the Performance Indicators and Key Performance Indicators definitions have been reviewed and amended to reflect and refer to the updated and proper IMO regulations including but not limited to; MARPOL, MLC and OCIMF standards.

The data is hosted with an external company, which is independently audited to verify its ability to safeguard the data. BIMCO does not have direct access to the data provided by the participating companies. Tell us about the cyber safeguards that are in place.

The architecture of the Shipping KPI is essentially a web application and the way it works is by having a server and a client. The Server side handles all the storage of data, calculation, applying of business logic, authentication, authorizing etc. Depending on who is requesting something it returns the appropriate results. The Client side oversees the displaying of the data and handling the entire user experience on how the data and information of the server is accessed and displayed. The BIMCO Shipping KPI system is hosted on the Amazon EU cloud. The system uses password encryption hash function to safely store the users account information. As part of the normal operations information on the latest security patches and vulnerabilities is gathered and evaluated. On-top of this Amazon provides security patching to their hosting platform on a regular basis. In case any vulnerability information is released which potentially could affect the KPI, the updating patches is initially tested before being deployed to the KPI Production system. The Software is based on Open Source Stack (Linux, MySQL, and Python) and the developing tool used to develop the Shipping KPI is MVC framework Play. Furthermore, SOFTImpact, the application development company, also acting as legal guardians of the user's date, currently being ISO 27001 certified and is covered by the BIMCO IT audit. Users login location is logged and monitored and if a user is logging in from a different location an email is send to the user for information.

300 companies use Shipping KPI, reporting on around 6,000 ships, this has increased by 1,500 ships since BIMCO acquired the system in 2015. That's good progress. When did the newly designed platform kick off?

The BIMCO Shipping KPI version 3 was activated on 1 April 2018 so user can start reporting on the Quarter one 2018, though still be able to report on 2017 quarters under Shipping KPI version 2.6 in their own pace and in order not to break historic data.

Shipping KPI is a tool for the entire industry run on a not-for-profit basis. How does it differ from other ship rating software – Rightship, for example?

No third parties have access to the BIMCO KPI only the users being data providers have access. The BIMCO Shipping KPI system is based on self-reporting and includes elements and data which are not publicly available (nationalities, emitted CO2, NOx, Sox, drydocking, trading area, Commercial inspections, etc.). Rightship is using publicly available information from various sources such as Port State Control. The BIMCO Shipping KPI is fully transparent in terms of elements and formulas. Users can under their account grant access to; clients, stakeholder and third parties, etc. on specified different levels and periods.

SEDNA's Powerful Teamwork and Transaction Tool

In shipping, the team with the best documentation always wins. Today, for many stakeholders, that increasingly means employing SEDNA's E-mail software platform for myriad projects.

By Joseph Keefe

Bill Dobie is Founder and CEO of SEDNA with over 20 years of experience in bringing technology and people together while creating opportunity for innovation and growth. His newest product, specifically designed for the shipping industries, is a cloud-based communication and transaction management platform, purpose-designed for the shipping sector to help reduce operating costs and improve team efficiency.

That's important because, among other things, SEDNA brings organization accountability to transactional based projects. Before and during and any project, the improvements that SEDNA brings to any team's efficiency can be the difference between success and failure. Afterwards, the remarkable storage and organization of all project-related data may well be just as important. That's because, in shipping, the party to a dispute or contract discussion may be in the right, but only the side with the best documentation will win.

Tellingly, IBM and Maersk recently cited the fact that the "cost of the required trade documentation to process and administer many of these goods is estimated to reach one-fifth of actual physical transportation costs." Given the context – that more than $4 trillion in goods are shipped each year, and more than 80 percent of the goods consumers use daily are carried by the ocean shipping industry – the potential savings are almost beyond comprehension.

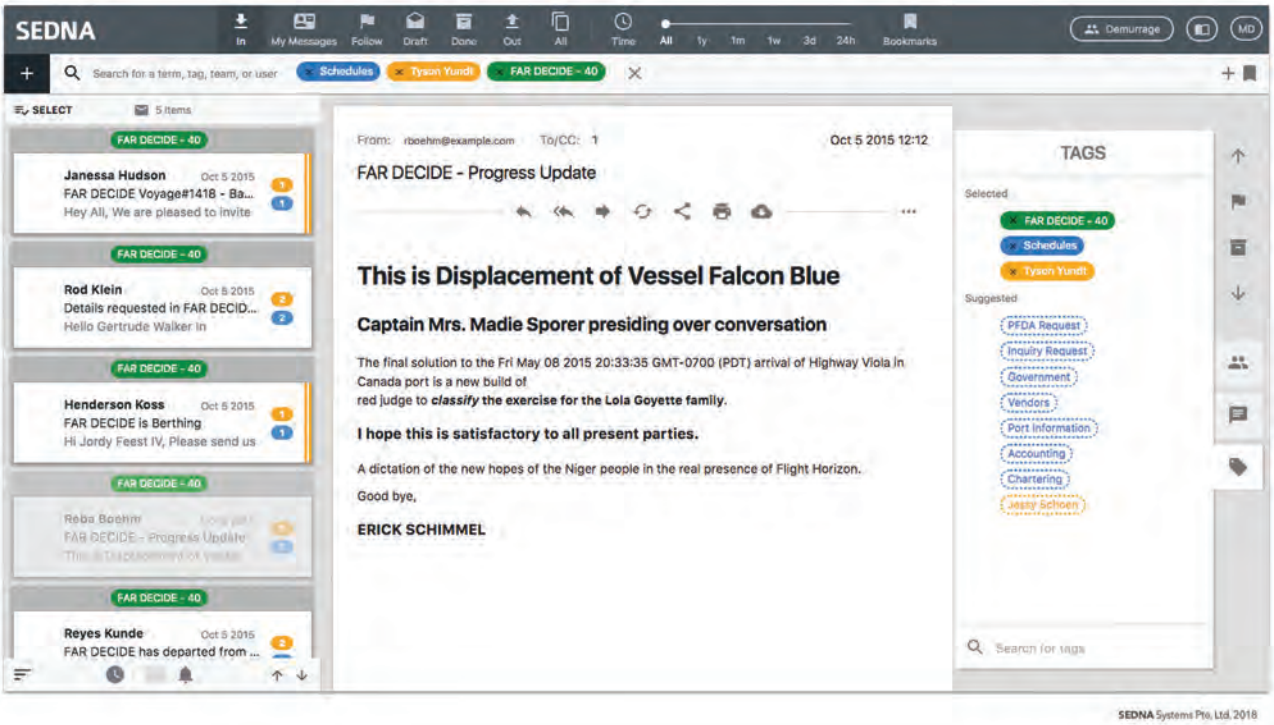
For the most striking case for an alternative to the current reliance on e-mail, one need only look at a garden variety transaction, which creates as many as 1,000 emails. Indeed, for the high value, income-generating human assets of these organizations – such as traders, brokers, ship agents, and ship owners – exchanging millions of internal and external emails each day, using antiquated software systems is no longer fit for purpose. And, that's where SEDNA comes in.

Foundations

Bill Dobie is an entrepreneur with a long history in the shipping industry. In 2000, he co-founded Navarik, a pioneer in the delivery of software as a service to large industrial organizations. Then in 2010, he started Stage 3 Systems which runs major software services for shipowners, charterers, and agents around the world. Eventually, that kind of innovation also produced SEDNA, which today, run as a completely independent business.

SEDNA, says Dobie, was really spawned by the needs of his existing Stage 3 customers. He explains, "Everywhere we went, we continued to see our systems being deployed or other software systems being deployed, but we also saw most of the commerce happening in e-mail." As it turns out, shipping is a business that requires discussion and collaboration, and e-mail is one of the primary ways that industry goes about that process. But, Dobie saw that the process was far from perfect. "What we saw again and again, is that everyone was looking at new initiatives but nobody actually looked at the e-mail itself as a starting point in order as a way to work better."

SEDNA can be described as a transactional E-mail software platform. In reality, it is much more. "We help people build ships. We help them monitor the performance of the ships; before and as they are being built," says Dobie. In shipbuilding, he says, change orders are what cost money. Continuing, he adds, "What we saw with one of our customers – Seaspan



– during one project, there were about 30,000 e-mails going back and forth just to figure out and follow up on that type of thing. And, while we continue to build and deploy software for shipping companies, we realized that all of the 'good stuff' was actually contained in an e-mail."

SEDNA in Action

Separately, another firm – a West coast-based shipping agent – told SEDNA, "We've got Outlook, and we're not allowed to archive the e-mail after 6 months." Anyone who has overloaded their local server with too much Outlook mail can sympathize. Dobie and the SEDNA team set out to produce something better. Instead of building an add-on to Outlook or other programs, the team set out to build a better hosting client.

SEDNA is a messaging platform, and it's for shared e-mail, built very much for the shipping business. Shipping uses shared e-mail and this often involves a distribution list. At its heart, SEDNA replaces that aspect of Outlook. Dobie explains further, "It's where your shared e-mail comes into, and then I come in, I see a message, I can see that you read it, I can see that someone else read it, I've read it, I can leave a note on it for you, I can ask you to do something on it and I can follow along.

Cloud-based, and built on top of Amazon, the SEDNA product is secure and highly available. For shipping concerns who deal daily in transactional matters – shipbuilding, charter contracts, and other similar actions – SEDNA becomes a logical choice for shared, team-based e-mail. So for private e-mail, a standard e-mail program works well for what it was intended, which is private e-mail involving HR matters, personal communications, etc. But for a team e-mail where the group has to work on something together, which is mostly how shipping works, SEDNA could be the panacea.

SEDNA allows another system, through an interface, to program it in real time. In this way, e-mails related to different transactions, can automatically be tagged, eliminating the time which a user has spent organizing or looking for the e-mail they have to act on. Dobie points to a real life situation to explain it better. "We have a big ship agent in Australia – they've got about 60 agents – all those agents were dragging e-mails into folders, two hours each, daily. SEDNA eliminated all of that by automatically filing the e-mails, and presenting them to the agents."

The new v02 version of SEDNA boasts much improved functionality. With a more user friendly interface and an even better database, the platform is much more intuitive in letting people know which messages are important require their focus. New features also include allowing private conversations between team members, while staying inside the SEDNA.

If time is money, then for a shipper, demurrage can be real currency. Indeed, midsized trading houses often set up demurrage departments as profit centers. As they meticulously document every second of every voyage, their transactional partners can miss critical 'time bars' because they either weren't aware of that data or more likely, couldn't get to it on time because it has been either misfiled or deleted. But, not if that trading partner is using SEDNA.

Seaspan: Sold on SEDNA

Seaspan is an independent owner, operator and manager of containerships. In a nutshell, Seaspan provides many of the

"We help people build ships. We help them monitor the performance of the ships; before and as they are being built. What we saw with one of our customers – Seaspan – during one project, there were about 30,000 e-mails going back and forth just to figure out and follow up on that type of thing. And, while we continue to build and deploy software for shipping companies, we realized that all of the 'good stuff' was actually contained in an e-mail."

– Bill Dobie, Founder and CEO of SEDNA

world's major shipping lines with alternatives to vessel ownership by offering long-term leases on large, modern containerships combined with industry leading ship management services. A global operation, Seaspan employs more than 4000 people on shore and at sea. Three years ago, they turned to SEDNA as a way to better organize certain aspects of their transactional business. Since then, they haven't looked back.

According to Ian Robinson, Director, Projects and Technology at Seaspan Ship Management Ltd., the software wasn't originally rolled out in one flash. "We had teams all around the world so it was a case of building it, team by team. And we built it out for sub-teams, so it started with a definite central plan, and over time, we found more uses and functionality for it. It's quite mature now in our organization, but it's taken about two years to get it set up with the teams the way we wanted it to."

For Robinson and Seaspan, SEDNA is a supplement to his existing E-mail platform. "I'll qualify that," he explains, adding quickly, "For me, it's a supplement. I have Outlook to deal with management in the company and more personal, one-to-one stuff. Tasks involving things like HR we still approach in the old-fashioned Outlook way. But, if you are talking about teams, groups or project-based tasks, then it's definitely SEDNA."

Also according to Robinson, when Seaspan teams are dealing with the same vessel or the construction of the vessel, one of the things that SEDNA handles very well is guarantee claims – where you might, for example – be dealing with a series of issues all under one contract. "With Outlook, you get people sending to people that they think are involved, or might not be involved, so pretty quickly, the information is out there, but it becomes fragmented. When you are dealing with a single project, it is more ideal when the whole team knows the status. We're not dealing with dollar signs; usually, we're dealing with real issues on real ships. SEDNA allows you to know what's important – time and action – instead of having to sift through a mountain of E-mail, one by one." At the same time, senior staff often don't need to be involved in the day-to-day minutia; they can collect that information and then find what they need, when they want it.

For the shipbuilding aspect of Robinson's day-to-day routine, SEDNA has introduced a level of organization and documentation that is invaluable. "Sometimes, we'll have teams imbedded into a shipyard for more than one year. It might be a series of ships; sister vessels. And often times, the problem we might have in one ship, probably will impact the other nine," he explains, adding, "It's about having common information and you realize you don't have to reinvent the wheel to start the next vessel that might be getting the keel laid a month apart from another. If you have a group e-mail address, then the information available for one ship is also available for all ten."

Benchmarking what SEDNA has saved his department overtime is difficult, says Robinson. As an example, however, Robinson points to specific transactional advantages that SEDNA can bring. "SEDNA remembers the issue that we had with the main engine on the first ship in a series, so when the fifth ship comes along, we have that knowledge to prevent it or shorten the pain, even when there is turnover of personnel over a five year period (yours and that of the shipyard). All the notes are saved and in one place. The knowledge base is there; you can look back and find why you made that decision. The shipyard might want to push an extra cost on you, where prior to that, it was a standard cost and procedure. Or perhaps,

"I'm quietly used to it instead of overtly enthusiastic. It takes away an element of hassle. In a previous life, I've run other projects using other e-mail programs and in those cases, you had to introduce a level of discipline to save the information. When a project goes bad or if there's a dispute, if you can't find that e-mail or documentation, you're in trouble. So, SEDNA introduces a safety net that we do not have to worry about, anymore."

– Ian Robinson, Director, Projects and Technology at Seaspan Ship Management Ltd.

you'd already paid for it at the start of the project. That's a direct impact save of the software."

Security is important to Seaspan, as well. Like any big firm, Seaspan has contractors and full time employees involved in every project. With standard E-mail-based operations, then the potential for leakage of sensitive information is very real. SEDNA, on the other hand, is securely held, with only access to Seaspan authorized personnel. Contractors have access to information but they can't walk off with it, send it elsewhere or delete it.

SEDNA's unlimited data capacity and archiving capabilities also come in handy. "At a high level, it's about individual projects, and then drilling down, it allows you to find what you need in one place. The search functions are very good and the tagging function is quite useful. And, the secure storage can handle high volume. You don't have to purge," says Robinson.

In the end, Robinson describes a comfort level with the product and an awareness of SEDNA can do. "I'm quietly used to it instead of overtly enthusiastic. It takes away an element of hassle. In a previous life, I've run other projects using other e-mail programs and in those cases, you had to introduce a level of discipline to save the information. When a project goes bad or if there's a dispute, if you can't find that email or documentation, you're in trouble. So, SEDNA introduces a safety net that we do not have to worry about, anymore." And that translates into the old adage of 'whoever has the better documentation always wins – it doesn't mean you were right – it just means you had your ducks in the row.'

At a base level, Robinson points to SEDNA's most valuable aspect: "It's first and foremost; project oriented. There's got to first be a group of people wanting to share this correspondence. I have roving superintendents that do on board training and engineering fault-finding on board the vessels. They are a tight knit team, but they have to travel and through the SEDNA platform, they can see who's coming off a ship, who is joining, etc. So there are scheduling benefits as well." From the transactional aspect of any deal, he says, "You might have three different groupings of guarantee claims. And, guarantee claims can extend beyond one year."

Manage Today's Transactions with Tomorrow's Tools

Data clearly shows that using new SAAS tools – like SEDNA – can reduce the cumulative time of the personnel involved in a single transaction within an organization by 60 minutes. For a company with a 100-strong trading or broking team, the time saved could equate to an annual financial savings of $1.35m.

What's more, these are not theoretical calculations. Leading shippers, owners and brokers such as Glencore and Seaspan – not coincidentally both SEDNA clients – are already using this technology to drive new levels of efficiency into their operations. For an industry trading more than $4 trillion in goods each year, this is just the tip of the iceberg.

SEDNA uses the word 'transaction' to describe a voyage, a contract, or project. Today, somewhere overseas in some far-flung shipyard, the builder is hoping that you can't find that e-mail from 10 weeks ago where they said they would 'do this but not that,' as it concerns one particular building project. If you do, it's going to cost them plenty. Fortunately, you've got SEDNA. And, the team with the best documentation always wins. You knew that, right?

Industry 4.0 Solution Marries Siloed Data for Terminals

Transforming the Liquid Storage Terminal Through a More Holistic View of Multi-Modal Operations.

By Robert Kessler

Over the past few years, web-based collaborative process-optimization tools have played a major role in helping liquid storage terminals absorb massive growth in crude oil transportation traffic from onshore shale finds. Initially deployed at the dock, these tools enabled users to reduce dock delay times an average of 35 percent within the first few months of their adoption and to complete approximately 15 percent more vessel calls within the first year.

The most recent tools have evolved to provide planning, reporting, forecasting, analytics, and alerting capabilities across all terminal logistics operations – setting the stage for new ways to manage multi-modal product movements.

Terminal optimization tools are just one of many technological advances in the oil and gas industry that fall under the umbrella of "Industry 4.0" solutions. Aimed at delivering efficiency gains across numerous manufacturing, transportation, and other sectors, Industry 4.0 solutions aggregate sensor, planning and forecasting data into a single view. They also employ analytics and real-time alerting capabilities to streamline and optimize processes and decision making. At the terminal, Industry 4.0 tools that have been proven at the dock are now helping to reorganize and enhance all supply chain logistics.

From the Dock to Tanks, Trucks, Rail, and Pipelines

Today's terminal optimization tools build on a foundation of steady advancements in consistent and automated asset-utilization reporting. When first introduced more than a decade ago, these tools were first used at the dock to improve visibility into vessel operations and efficiency. They leveraged real-time and historical Automatic Identification System (AIS) data about vessel movements to provide a clearer picture of the liquid-cargo transportation process, so that operators could cut costs and improve safety and security.

They also introduced greater transparency and collaboration into the process of managing vessel traffic and protecting assets. This was especially true in the area of demurrage – before the advent of these tools, tug and tanker operators often differed with terminal owners regarding the root causes of delays that contribute to demurrage costs, and who was responsible for the penalties. Now, these tools give all parties the ability to discuss and dispute these issues – and to improve collaboration for identifying and correcting the root causes of delays – by using the same information about real-time and historical vessel movements.

More recently, terminal optimization tools have been extended to encompass all terminal product movements from the dock to tanks, trucks, rail, and pipelines. This creates new and better ways to improve real-time operational planning and reporting across all transportation modes – from pipeline transfer scheduling, tasking, and line management functions to historical reporting for performance tracking, optimization, and trending analysis. These tools also deliver new forecasting capabilities across all transportation modes and are transforming terminal operations by serving as the most consistently accurate source of information – all available from a single shared source.

These tools' ability to improve asset reporting and automate logging events is revolutionizing terminals through two major innovations. First, because they provide significantly more comprehensive logistics information, they improve asset-utilization decisions by preempting planning oversights and associated scheduling conflicts. Users have complete real-time visibility across many steps of multiple processes that often overlap and affect each other.

The tools combine operational and scheduling data into one place (Figure 1). There might be a situation, for instance, when two products must go through the same pump – with these tools, users can see this and schedule accordingly. Another product might need special handling or take longer to transport than the other. This and other challenges are solved using terminal optimization tools that enable collaborative tank-level forecasting and facilitate proactive alerting to prevent over- and under-fill situations and other scheduling conflicts.

These innovative tools also bring real-time key performance indicators (KPIs) and trending analyses into daily operations so operators can plan more effectively for investments in new tanks, assets, and other infrastructure. KPIs have traditionally been used to make capital expenditure decisions related to maritime dock expansion projects. They have enabled operators to demonstrate that existing dock capacities were being fully utilized. Now, the same approach initiated at the dock is being extended across the terminal. Organizations can generate reports on a variety of

terminal-wide task metrics and track measurable KPIs ranging from how long it takes to complete one task and launch another, to whether they are complying with emissions regulations.

Terminal optimization solutions are expected to support a growing variety of operational and product scheduling data inputs so users can make scheduling decisions based not only on historical data but also on predictive analytics. An example is predicting estimated times of arrival (ETAs). This capability will combine machine learning with historical data and real-time estimated time of departure (ETD) information to significantly improve dock scheduling and logistics.

Another opportunity to further advance the liquid storage terminal industry is by using terminal optimization tools to optimize port calls in support of the Oil Companies International Marine Forum (OCIMF) virtual tender initiative, which is aimed at reducing fuel costs and enhancing berth-on-arrival capabilities. Many companies are also exploring how the tools can be used to optimize Inventory in Motion processes, so they can extend feedstock inventory to ships at sea and improve vessel routing to optimize production facility efficiency.

Terminal optimization tools are taking their place among Industry 4.0 solutions in the oil and gas sector, revolutionizing liquid storage terminals as they become the logistics hub for all product movements. They are changing how terminals operate across all transportation modes by automating significantly more of the supply chain management process, and by leveraging real-time KPIs and trending analytics to improve and standardize productivity best practices and benchmarking while driving better decisions that increase efficiencies.

The Author

Robert Kessler,
Program Manager, Maritime for Oceaneering, has extensive experience in the marine management software industry in a variety of sales, marketing and consulting roles. At Oceaneering, he has responsibility to grow the company's Maritime products and service line including PortVision360 Asset Protection.

Product Throughput - 2018-01-29 - 2018-02-28 - Terminal A

Product	Receipts Movements	Receipts Volume	Receipts Tank(s)	Deliveries Movements	Deliveries Volume	Deliveries Tank(s)
Ship Dock 1						
East India Trading Company						
- WTI-WEST TEXAS INTERMEDIATE	2	305,000	Tank 1548	0	0	
Frank's Condensate						
- EAGLE FORD CONDENSATE	0	0		1	135,000	Tank 1574
Standard Oil						
- KEARL HEAVY	1	145,000	Tank 1571	0	0	
Oxen Trading						
- STONES	0	0		1	210,000	Tank 1584
- WTI-WEST TEXAS INTERMEDIATE	1	130,000	Tank 1578	0	0	
Mars Trading						
- BAKKEN	1	50,000	Tank 1587	0	0	
Eastern Condensate						
- GULF COAST B	2	470,000	Tank 1560	0	0	
- WTI-WEST TEXAS INTERMEDIATE	1	50,000	Tank 1587	0	0	
Standard Oil of Indiana						
- WTI-WEST TEXAS INTERMEDIATE	1	280,000	Tank 1551	0	0	
Totals	**9**	**1,430,000**		**2**	**345,000**	
Ship Dock 2						
East India Trading Company						
- BAKKEN	5	800,000	Tank 1548	0	0	
- BUNKER FUEL OIL	1	900	Tank 0200	0	0	
- DOMESTIC SWEET	4	1,038,000	Tank 1577	0	0	
- WTI-WEST TEXAS INTERMEDIATE	2	383,000	Tank 1531	0	0	
California Gold						
- Bunker - MGO	0	0		0	0	
- WTIP - WEST TEXAS INTERMEDIATE PREMIUM	3	1,097,730	Tank 1589, Tank 1582	0	0	
Oxen Trading						
- BAKKEN	1	260,000	Tank 1581	0	0	
Standard Oil of Indiana						
- WTI-WEST TEXAS INTERMEDIATE	1	550,000	Tank 1573	0	0	
Totals	**17**	**4,129,630**		**0**	**0**	
Ship Dock 3						
Texas NGL						
- Bunker - MGO	1	80		0	0	

UNLOCKING THE DATA GOLDMINE THROUGH AUTOMATION

Future-proofing the next generation of vessels paves the way for a thriving, sustainable and profitable shipping industry.

By Børge Nogva

As ships become increasingly smart, green, and sophisticated, the amount of electronic information handled on board is increasing exponentially. Hundreds of millions of data points are being generated across the industry every single day, but we need real-time analytics and the right expertise and understanding to fully harness their potential. With the right tools, these rich sources of information can provide ship owners and operators with an unprecedented insight into their ship's systems, which, in turn, can lead to important efficiency savings and reliability improvements.

However, if industry is to exploit the tangible opportunities that the growth of Big Data and digitalization presents, it's important to gain a better understanding of the automated systems on board a ship, which allow users to tap into the wealth of information that is sent throughout a vessel as a series of inputs and outputs during a voyage. This includes the engine's safety system, which is normally supplied with the engine to keep its operation safe. Another example is the vessel's propeller control system, which is usually supplied by the propeller maker and controls the pitch, rpm and clutches. Furthermore, integrated automation systems such as the Høglund IAS (Integrated Automation System) can be used to deliver a range of alarm and control tasks. And this is not an exhaustive list; ship owners have many sophisticated tools at their disposal that make operations safer and more efficient.

Unfortunately, these systems are often overlooked at design stage, but as automation partners continue to raise awareness of the benefits of automated systems in terms of improving vessels' reliability and performance, we are seeing a shift in mindset among ship owners and operators. Better utilization of on board data, reliable systems and cost-efficient operations resonates well with demands in the growing fleet of vessels carrying and being fuelled by LNG.

Industry focus: LNG vessels

One of the biggest breakaway stories from last year was the rise of LNG as a marine fuel and power source. The booming industry is reflected in the growing number of LNG vessels: as of January 2018, there were 119 LNG-powered vessels in operation, with orderbook figures coming in at 125 – a number that is certain to grow. Indeed, a survey conducted by German trade fair organizer, Hamburg Messe and Congress, revealed that 44% of respondents cited LNG as their first choice when contemplating fuel for newbuild projects.

This coincides with a global increase in demand for LNG, particularly in Asia. A recent report from BNEF revealed that the global demand for LNG is estimated to grow by 7.2% this year, surpassing the 300 million tons per annum mark for the

> while automation professionals can deliver significant benefits to the shipping, to do so requires the formation of new collaborations that unlock greater detail in the ship specifications for electronic systems. For instance, ship owners, designers and equipment manufacturers must define which data is necessary by specifying the end goals Big Data should contribute to, to benefit their vessels.

first time, with China shifting away from coal and LNG buyers continuing to demand greater flexibility through shorter and smaller contracts. This is not only driving growth in the LNG-carrying fleet, but changing it: the greater flexibility needed in the market is increasing the proportion of the fleet that is made up of smaller carriers and FSRUs.

This seismic shift in the global fleet offers a unique opportunity to not only increase the efficiency and environmental compliance of the fleet, but also represents a chance to increase expectations for reliability. Industry now has an opportunity to refocus on automation and realize the reliability and efficiency benefits that it can deliver.

As new vessels in this segment emerge, both carrying and fueled by LNG, it's more vital than ever that automation providers work as partners with owners, builders and operators, to ensure that the automation systems they provide are reliable, future-proof, and optimized for the unique needs of the segment.

For LNG-fueled vessels, the benefits of automation are broadly similar to those of their conventionally-fueled cousins. However, there are a few noticeable differences, mainly due to the fact that vessels using gas need to be adapted to account for the unique properties of LNG fuel.

Automation is also a vital requirement for vessels that transport LNG, either LNG carriers or bunkering vessels. These vessels use boil-off gas in their engines, which is processed through a fuel gas control system. This requires additional interfacing between the gas plant and the rest of the ship, drastically increasing the complexity of the automation required. In addition, as increased flexibility for refueling LNG vessels becomes a priority, specialized bunker vessels are beginning to appear in ports around the world to meet this need. In addition to using boil-off gas in their engines, bunkering vessels must extract vapor from receiving ships. This requires additional interfaces between the gas plant and the rest of the ship, requiring further tailoring of the automation system.

Høglund is leading the way in the relatively new segment. Of the small number of LNG bunkering vessels that currently exist, Høglund automation solutions are present on three of them, including Shell's specialized LNG bunkering vessel "Cardissa" built at STX in Korea, Sirius Shipping's "Seagas", and Bernhard Schulte's LNG bunkering vessel, which will be delivered from Hyundai Mipo during 2018. On all of these vessels, the unique configurations of their cargo handling systems have necessitated Høglund to work closely with their partners to design the automation systems from scratch, with ongoing support throughout the design, build and testing phases.

> It's time for ship owners and operators to take a stand and stop accepting disjointed systems that do not give them access to their data. They should aim to strike a balance between large integrated systems – where all elements are linked into an overarching IAS, which can be expensive – and fragmented systems where access to data and the ability to fine tune is limited.

Integration of systems

Our work in the LNG segment demonstrates the importance of a focus on automation for all vessels, regardless of fuel. We see the automation systems we create as the 'nervous systems' of vessels. Like nerves, our systems carry signals between ship systems such as the power management system, the cargo handling system, and an overarching IAS.

While automation professionals can deliver significant benefits to the shipping, to do so requires the formation of new collaborations that unlock greater detail in the ship specifications for electronic systems. For instance, ship owners, designers and equipment manufacturers must define which data is necessary by specifying the end goals Big Data should contribute to, to benefit their vessels. It is also necessary from a designer's perspective, to put requirements to equipment makers through the ship design specification. This leads to automation systems that can process and share the necessary operational data.

The importance of the effort to raise awareness of the significant benefits ship owners and operators can realize by making small improvements to specification requirements cannot be overstated. For example, we have integrated information from various sources on board for 25 years with an emphasis on logging of data that can be presented on a playback basis for easy review and analysis. Through remote connection our system delivers all the necessary data for owners to have insight

into the vessel's operation and performance.

To reduce costs even further, Høglund also has the ability to analyze 90% of issues remotely and find the root cause of the problem, even when the source may not be our system. This costs far less than physically sending an engineer to a vessel, a practice we only adopt in extreme circumstances.

It's time for ship owners and operators to take a stand and stop accepting disjointed systems that do not give them access to their data. They should aim to strike a balance between large integrated systems – where all elements are linked into an overarching IAS, which can be expensive – and fragmented systems where access to data and the ability to fine tune is limited. Achieving this balance should result in sensible systems integration that reduces the number of processors and software types – not only increasing access to valuable data but making upgrades and replacements easier.

Accessing the data goldmine

Høglund ensures that users of automation systems have access to the potential goldmine of data they generate. This can take the form of logging and playback systems, which record all inputs and outputs for a system, and storing up to a year's worth of data. This allows users to play back events and analyze any events, which is invaluable for diagnostics, optimization and bug-fixing. The data gleaned from automation systems can also be used to create a full picture of a vessel's performance through a ship performance monitor (SPM), combining fuel consumption, power consumer data, and vessel data such as average speed, distance sailed, wind speed and direction, draft and trim. This allows calculation and reporting of emission data such as NOx, SOx and CO2.

We're at the threshold of a significant acceleration in what ships and shipping are capable of. The potential of Big Data and digitalization for the industry is growing, but it will quickly reach a hard ceiling without the right supporting systems. New technologies and greener ways of shipping now afford us an opportunity to turn our attention inwards and prepare for what's to come; only by getting the basics right can we hope to future-proof the next generation of vessels and pave the way for a thriving industry.

The Author

Børge Nogva,

CEO, Høglund Marine Automation, has 24 years' experience from the Marine business. From the start he worked with propulsion controls and automation systems in the Ulstein group. After Rolls-Royce's acquisition in 1999 he has held various roles within sales and business management, both in Asia and in Europe. Since September 2013 he has been leading the OSV Business in GE Power Conversion, before making the decision to leave for HMA. Børge has an engineering education within electro technics and telecommunications from GTI in Gothenburg and an MBA from BI in Oslo.

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