

Harbours review

The past, present,
and future
of the container.
TOC Europe
2017 – summary

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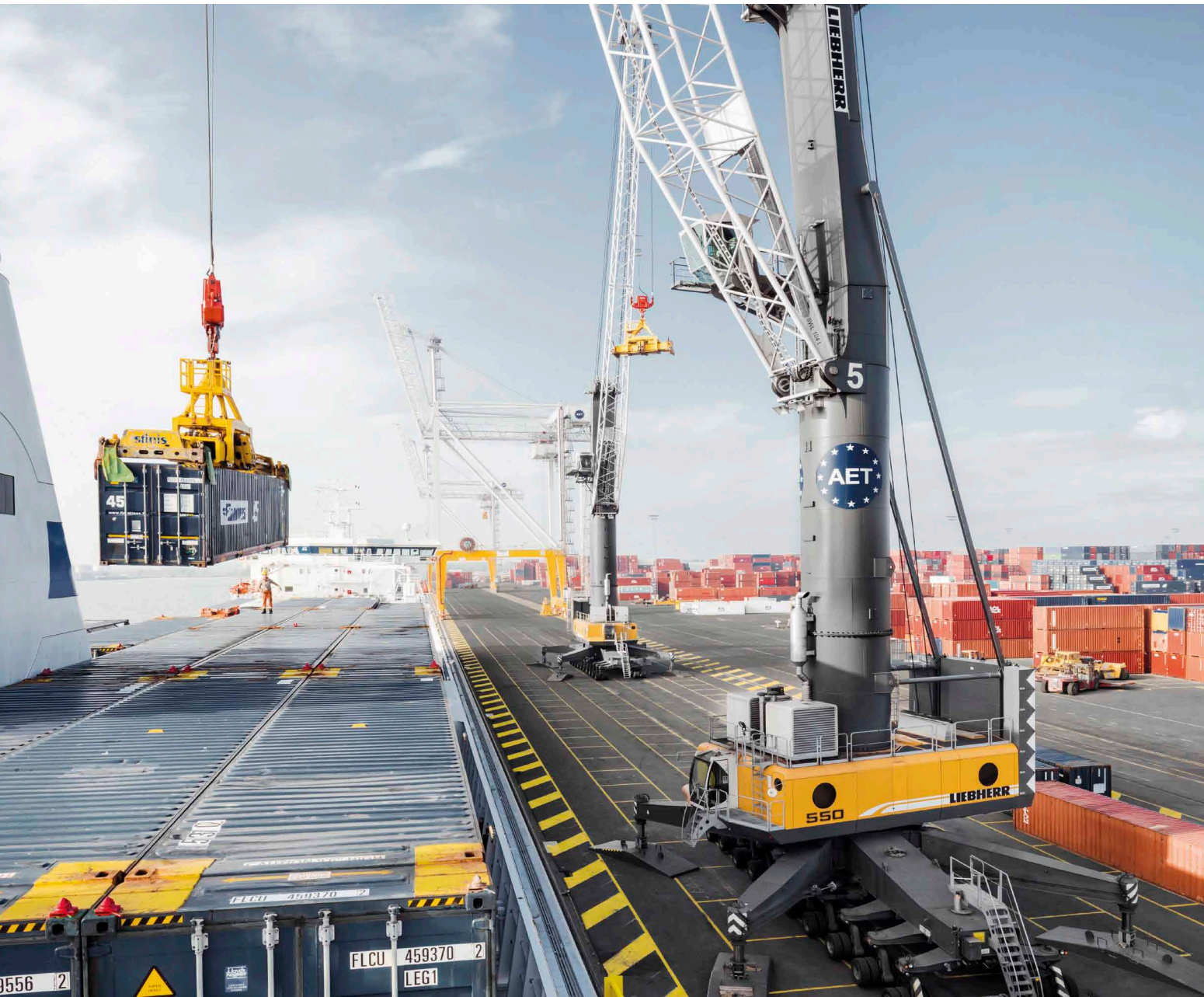
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Experience the progress.



Mobile Harbour Crane

- Fast, efficient and versatile material handling equipment
- X-shaped undercarriage guarantees the best weight distribution
- 360-degree mobility - outstanding in the MHC market
- Stepless hydrostatic power transmission for smooth and sensitive operation
- Flexibility makes it effective for all areas of application in the harbour

red-hot port matters

Photo: www.pexels.com

Konecranes sells equipment to USA

Georgia Ports Authority (GPA) recently ordered six ship-to-shore (STS) cranes for its Port of Savannah from the Konecranes of Finland. The cranes will have 66 tonnes of lifting capacity, an outreach of 61 metres, and a lifting height of 46 metres above the dock. The new units will be added to the terminal in the first half of 2020, raising the total number of Konecranes' STS in Savannah to 36. "Our volume growth continues to outpace forecasted demand. Shipping lines are moving 13-14 thousand TEU vessels into service on the East Coast more quickly than anticipated, and concentrating their deliveries at efficient gateway ports like Savannah. This new crane purchase, along with the four already on order, will enable GPA to increase crane capacity by nearly 40%," Griff Lynch, Executive Director, GPA, commented. Mika Mahlberg, Konecranes' Executive Vice President, Business Area Port Solutions, added, "It is our privilege to deliver another significant batch of STS cranes to GPA. The new cranes will add GPA's capacity to handle the largest vessels calling any port today and tomorrow."



Photo: Konecranes

Felixstowe to increase its crane capacity

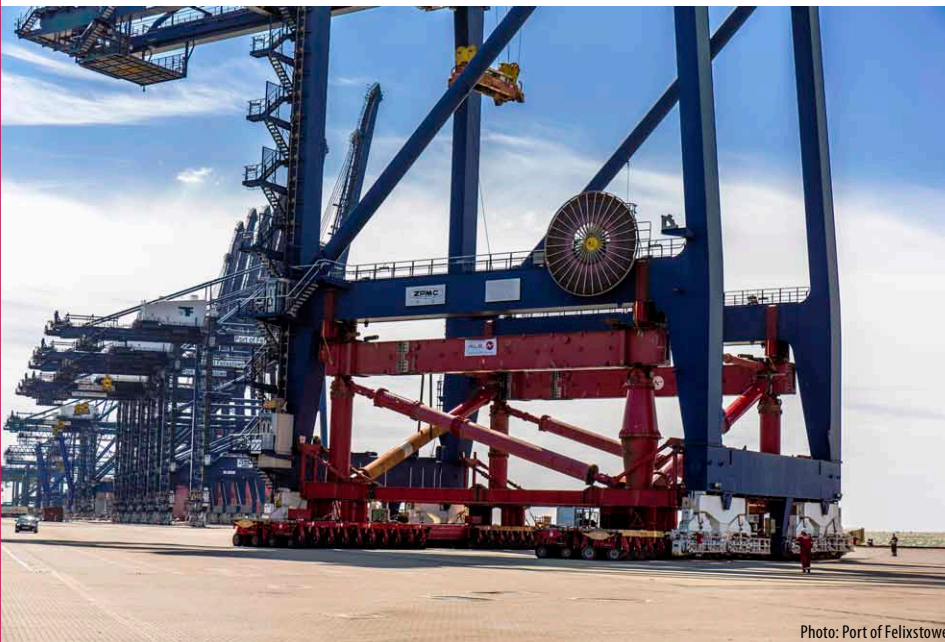


Photo: Port of Felixstowe

The English port of Felixstowe has ordered two new gantry cranes for its Berths 8 and 9, as well as started to raise the height of the existing 10 cranes at its Trinity Terminal. The new cranes, ordered from ZPMC in Shanghai and set for delivery in February 2018, will have a 59.5-metres outreach, sufficient enough to handle 24-row wide container vessels. The maximum operating height of 10 Trinity Terminal's cranes, also built by ZPMC, will be increased to 46.5 metres by December 2018. The greater height will allow them to work vessels with containers stowed up to 11 high on deck unrestricted under all tidal conditions. "The Port of Felixstowe has facilities to handle vessels of all sizes. It is the clear port-of-choice for the largest mega ships and we had 137 calls by vessels of over 18,000 TEU last year. Increasing the total number of

cranes on the port and increasing the height of 10 cranes on Trinity Terminal will give us greater flexibility to accommodate the largest categories of ship size. In total, we will have 22 cranes capable of handling the largest container vessels in service," Clemence Cheng, Executive Director, Hutchison Ports, said.

CMA CGM links the Black Sea with the Atlantic via Med Express line

The container shipping company has launched the Black Sea Med Express service, connecting Ukraine, Romania, Turkey, Malta, Algeria, and Morocco. The weekly loop is served by four 1,700 TEU vessels, linking the ports of Odessa, Constantza, Ambarli, Izmir, Malta, Annaba, Tangier, and Casablanca.



NTB upgraded to Navis N4

North Sea Terminal Bremerhaven (NTB) went live with Navis N4 3.1 terminal operating system. Beginning in November 2015, the 15-person NTB project team worked jointly with Navis to migrate the SPARCS 3.7 and Express 2.9 systems to N4 piece-by-piece, focusing on the core system first, followed by the surrounding applications and systems, as well as thorough testing throughout each phase to ensure the system would perform optimally during the go-live. "N4 is the most advanced and widely-used terminal system on the market, we never considered another provider when tasked with migrating from Navis SPARCS and Express. The reliability, scalability and upgradability of N4, combined with its superior functionality, data quality and advanced analytics capabilities, will enable us to take NTB operations and performance to the next-level," Marc Dieterich, General Manager Operations, North Sea Terminal Bremerhaven, commented. Guenter Schmidmeir, Vice President & General Manager, EMEA, Navis, added: "The level of preparedness and attention-to-detail demonstrated by the NTB project team was incredible, and contributed to our collective ability to complete the migration successfully, maintain existing productivity levels, and hit the essential May 1st cut-over date for the new system. We are thrilled to see our customer of almost two decades cross this important milestone and are confident they will soon begin to experience all of the benefits a more modern platform like N4 has to offer."

Strategic transport and management consultancy.

Wilhelm Borchert.

Preparing the future.

Liebherr opens to Australia



Photo: Liebherr

Although the company has been present in the region since the 1970s, only recently did it decide to establish its full service, spare, and sales activities in Oceania. This means not only better customers support, but also introducing new products, such as the new Liebherr Reachstacker. Before, Morrow Australia represented Liebherr's crane business in Australia.

STX France to be nationalized

Bruno Le Maire, the French Minister of Economy and Finance, said that state control of STX France is motivated by the need to protect the country's strategic interests in naval construction. The intervention of the government counters the plans of Italian state-controlled Fincantieri to gain majority stake in the yard. They were interested in purchasing 66% stake, but the French government agreed only to 50%. Fincantieri rejected this offer, and the French cabinet, now having the preemption rights (holding so far 33.3% of the shares), decided to take over the shipyard for EUR 80 mln. "The preemptive decision that we have just taken is a temporary decision, to give us time for better negotiations and a good agreement," Bruno Le Maire said. Pier Carlo Padoan, the Italian Minister of Economy and Finance, and Carlo Calenda, Minister of Economic Development, explained the Italian point: "We consider that the French government's decision not to honor agreements is serious and inexplicable."



Photo: STX France

Sandbank wind farm goes online

The project, developed by Vattenfall and Stadtwerke München in the North Sea, consists of 72 Siemens' turbines of 288 MW total capacity. Sandbank will cover the annual electricity demand of approx. 400 thousand households, at the same time lowering CO₂ emissions by 700 thousand tonnes. The investment started in 2015, costing in total EUR 1.2 billion.

Vattenfall offshore wind farms in the German North Sea

Parklayout Sandbank

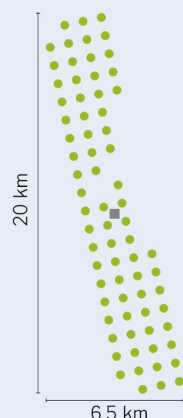


Photo: Vattenfall

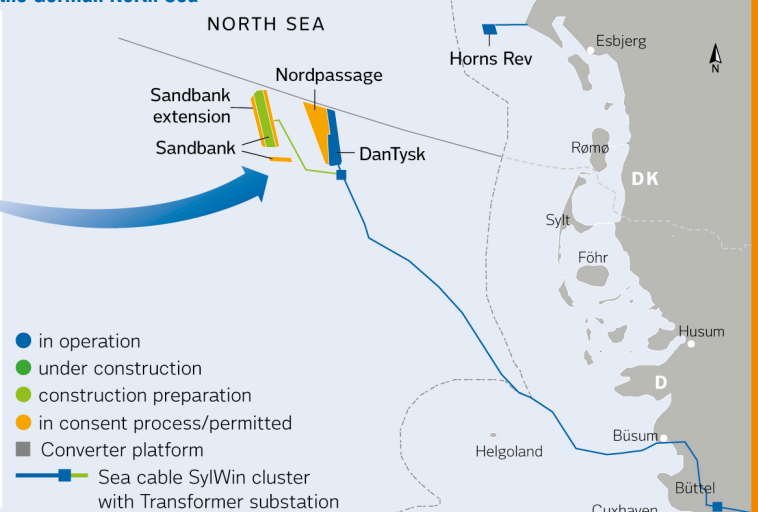


Photo: www.pexels.com

NORWEGIAN PORTS:

43.3 mln tn handled in Q1 2017 (-5.1% yoy)

Liquids have the biggest share in the total turnover results of all of the country's ports, amounting to 21.7 million tonnes (-11.7% year-on-year) within the reported period. Dry bulk handlings made 16.5 million tonnes (+5.9% yoy), while container tonnage decreased by 5.7% yoy to 1.4 million tonnes.

Top 10 Norwegian ports [thou.]

	Q1 2017	Yoy
Bergen	11,863.870 tn	+16.0%
Narvik	5,198.097 tn	+6.6%
Karmsund	3,004.417 tn	-6.6%
Grenland Port Authority	2,952.163 tn	+1.9%
Oslo	1,367.623 tn	-10.9%
Trondheim	1,055.112 tn	+8.2%
Kristiansand	423.109 tn	-9.4%
Ålesund	375.417 tn	-4.8%
Stavanger	280.319 tn	-40.5%
Tromsø	178.429 tn	+5.7%
Total	26,698.556 tn	+5.8%

UK TOP 10 PORTS:

82.17 mln tn handled in Q1 2017 (-0.3% yoy)

The biggest increase year-on-year of 5.5% was noted in Southampton, where almost 9.0 million tonnes of cargo was handled, comparing to 8.52 million tonnes handled in Q1 last year.

UK Top 10 ports' volumes

Port	Q1 2017	Yoy
Immingham and Grimsby	13.73 mln tn	+1.5%
London	11.28 mln tn	-0.1%
Southampton	8.99 mln tn	+5.5%
Liverpool	8.14 mln tn	+4.2%
Milford Haven	7.78 mln tn	-13.3%
Forth	7.28 mln tn	+3.3%
Felixstowe	6.83 mln tn	+5.1%
Dover	6.81 mln tn	+3.0%
Tees and Hartlepool	6.77 mln tn	-6.5%
Belfast	4.56 mln tn	+2.0%
Total	82.17 mln tn	-0.3%

SPAIN'S TOP 10 PORTS:

175.73 mln tn handled in I-V 2017 (+4.2% yoy)

Barcelona rose the most in the period of January-May, up by 20.2% year-on-year to 23.80 million tonnes.

Spain's Top 10 ports

Port	I-V 2017	Yoy
Algeciras	41.63 mln tn	-4.0%
Valencia	30.38 mln tn	+1.0%
Barcelona	23.80 mln tn	+20.2%
Cartagena	13.65 mln tn	+9.6%
Tarragona	13.35 mln tn	+5.4%
Bilbao	13.18 mln tn	+3.1%
Huelva	12.63 mln tn	-2.4%
Las Palmas	10.55 mln tn	+14.2%
Gijón	9.12 mln tn	+9.9%
Castellón	7.44 mln tn	+7.1%
Total	175.73 mln tn	+4.2%



Photo: www.pexels.com

PORTS OF GALAȚI, BRĂILA, AND TULCEA:

3.44 mln tn handled in H1 2017 (-18.3% yoy)

Counting separately, Galați's result for H1 2017 was 1.98 million tonnes; Tulcea processed 0.89 million tonnes; while Brăila port served 0.56 million tonnes. Jointly, the biggest quantities of freight in the three Romanian ports were raw mineral products – 892.07 thousand tonnes, steel minerals – 845.12 thousand tonnes, laminates – 424.50 thousand tonnes, coal – 266.24 thousand tonnes, and grains – 119.78 thousand tonnes.

Source: Business Review

PORT OF DUNKIRK:

46.7 mln tn handled in 2016 (+0.3% yoy)

With 22.1 million tonnes (+1% year-on-year), dry bulk handlings accounted for nearly half of the French seaport's total freight turnover last year. Out of the total 22.1 million tonnes, 11.5 million tonnes (ore and coke) went through the port of Dunkirk to ArcelorMittal steel works. Coal added 5.4 million tonnes (+6% yoy), followed by 2.8 million tonnes of grains (-8% yoy), as well as 2.4 million tonnes (+9% yoy) of other dry bulk (incl. slag, cement, scrap metal, sand, aggregate, alumina, and petroleum coke). General cargo noted a drop by 1% yoy to 20.3 million tonnes. Ferry traffic reached 16.0 million tonnes (-2% yoy). A total of 680 thousand (-2% yoy) trucks and trailers were handled. Altogether 2.92 million (-9% yoy) passengers were brought on-board ferries, along with 751 thousand pax cars (-8% yoy). However, Dunkirk's container traffic advanced by 7% yoy – both in terms of TEU volumes (341,041 twenty-foot boxes), and tonnage (3.15 million tonnes). A total of 20 thousand and 10 thousand TEU were shipped using inland waterways and railways, respectively. Break-bulk decreased by 6% yoy to 1.2 million tonnes. The turnover of liquids rose by 2% yoy to 4.3 million tonnes, including 3.8 million tonnes (+2% yoy) of oil and oil products, and 0.5 million tonnes (+5% yoy) of other liquid bulk goods (i.a. oils, chemicals, industrial alcohols). Additionally, Dunkirk's LNG terminal welcomed its first three shipments last year, totalling 193 thousand tonnes.



PORT OF ANTWERP:

111.38 mln tn handled in H1 2017 (+2.8% yoy)

With nearly 61.29 million tonnes (+2.5% year-on-year), containerised freight traffic accounted for over half of the Port of Antwerp's cargo traffic during 2017's first six months. A total of 5,143,305 TEU were handled at Antwerp's terminals in the reported period, an increase by 1.9% yoy. Ro-ro traffic rose as well – by 9.2% yoy to 2.56 million tonnes. The number of handled cars went up by 5.0% yoy to 651,363 units. Handlings of break-bulk advanced, too, by 13.0% yoy to over 5.37 million tonnes. The turnover of liquids also marked an increase – by 1.8% yoy to 36.04 million tonnes. Last but not least, dry bulk throughput rose as well – by 1.1% yoy to 6.12 million tonnes.

PORT OF YSTAD:

124,712 ro-ro cargo units handled in H1 2017 (+7.9% yoy)

The Swedish port noted five new all-time highs – the best first half year result ever, as well as in the turnover of total freight, trucks & trailers, pax cars, as well as the numbers of passengers served.

Port of Ystad's volumes

	H1 2017	Yoy
Total cargo traffic	1,718.7 thou. tn	+3.0%
Ro-ro cargo units, of which	124,712	+7.9%
Trucks & trailers	120,838	+9.0%
Railcars	3,874	18.1%
Passengers	924,133	+7.1%
Pax cars	242,282	+7.8%
Busses	1,370	-1.7%

PORT OF TANGER MED:

1,555,560 TEU handled in H1 2017 (+11% yoy)

Also, as many as 161,868 ro-ro cargo units (+8.6% year-on-year) went through the Moroccan port within the reported period. Tanger Med handled as much 3.62 million tonnes of liquids (-3% yoy), and 0.22 million tonnes of grains (-27% yoy). The number of passengers rose to 858,680, up by 12% yoy.

PORT OF TARANTO:

5.63 mln tn handled in Q1 2017 (-3.4% yoy)

While export traffic decreased by 15.5% year-on-year to 3.12 million tonnes in the reported period, imports advanced by 17.5% yoy to 2.51 million tonnes.

Port of Taranto's volumes

	H1 2017	Yoy
Turnover by cargo group [thou. tn]		
Dry bulk	3,042.0	-11.1%
General cargo	1,332.9	+10.6%
Liquids	1,256.8	+4.2%
Total	5,631.7	-3.4%
Turnover by destination [thou. tn]		
Exports, of which	3,122.2	-15.5%
Dry bulk	2,571.9	-17.8%
Liquids	394.4	-21.7%
General cargo	156.0	+146%
Imports, of which	2,509.5	+17.5%
General cargo	1,176.9	+3.1%
Liquids	862.4	+22.7%
Dry bulk	470.1	+61.4%



PORT OF GDAŃSK:

18.6 mln tn handled in H1 2017 (+3.6% yoy)

The turnover of liquids rose the most over this year's first half – by 13% year-on-year to nearly 6.37 million tonnes.

Port of Gdańsk's volumes

	H1 2017	Yoy
General cargo (incl. timber)	7,983.3 thou. tn	+10.5%
Liquids	6,367.9 thou. tn	+13.0%
Coal	2,094.5 thou. tn	-17.2%
Other dry bulk	1,622.3 thou. tn	-18.4%
Grains	507.2 thou. tn	-8.5%
Total	18,575.2 thou. tn	+3.6%
Container traffic		
TEU	689,093	+6.7%
Containerised	7,143.4 thou. tn	+7.0%
Pax traffic		
Passengers	59,201	+25.2%

voices

Photo: www.pexels.com



Suzanne Tiago

Portfolio Marketing Manager, TOC Events Worldwide

The recent TOC Europe event returned to Amsterdam – for the first time in 10 years. Visitor and delegate attendance at the event increased nearly 5% from the year before, and we had record numbers of exhibiting companies. The three-day exhibition was once again co-located with two free-to-attend technical seminar tracks as well as the high-level Container Supply Chain (CSC) Conference. Liner shipping, port connectivity, One Belt One Road and digitalization were some of the main subject areas covered at the CSC Conference. Delegates in attendance included carriers, third-party logistics providers, cargo owners and well as directory boards from ports and terminals. Speakers included representatives of Maersk Line, Stanley Black & Decker, Yilport and KTZ Express.

The main focus of the two-track free seminar programme was port efficiency, particularly in the fields of digitalization, automation, future terminals and also safety. The TECH TOC seminar fielded speakers including personnel from DP World, APM Terminals, Global Container Terminals and New Orleans Terminal; while speakers in the TOC Bulk seminar included Vale, Peel Ports and BASF. Within the trade exhibition, visitors met over 180 suppliers and saw the latest technology, including product launches, equipment displays, software demonstrations and simulations. TOC Europe positions itself as the Annual General Meeting for port and terminal professionals, providing knowledge and networking for both container terminal personnel and bulk logistics executives as well as their equipment and service providers.



Martin Mannion

Ports & Marine Director – Europe, Middle East Africa & India, AECOM

Held in Amsterdam at the end of June, this year's TOC Europe was once again the port industry must-attend event for AECOM, with our focus put on port planning, design, and delivery. It was not only a place for us to meet existing and potential clients, partners, and suppliers, but it was also a great forum for debating current issues, such as bigger ships, terminal automation, cybersecurity, and advances in technology. We were also able to explain the innovative ideas and techniques being applied in our planning, design and delivery of projects globally. It gave us an opportunity as well to learn first-hand more about the best practices implemented by shipowners, operators, advisors, and suppliers.



Lisa Barbieri

VP Marketing, CM Labs

During this year's edition of TOC Europe one could clearly sense global market players' increased interest in simulations. The adoption is largely driven by the need to use the actual equipment in the port to meet productivity requirements. With a documented reduction in time of 50% in real machine lessons when our simulators are used, combined with the ability to prepare operators for faults which cannot be reproduced on actual equipment, our products with a very high degree of realism are winning over even the skeptics. We also very recently announced that we're partnering with DP World on three continents as their simulation training solution provider. Attendees at TOC Europe got a hands-on look at the technology that market leaders are adopting to ensure safer training and more productive operations.



Matthew Wittemeier
Sales & Marketing
Geschäftsbereich
Logistik, INFORM

I'm new to the logistics industry, coming from the aviation sector. Based on past experiences, I have to admit that I did not have high hopes for the TOC Europe exhibition nor the Tech TOC programme. How wrong was I! The exhibition and conference attracted a broad range of decision-makers and thought-leaders from across the terminals market together under one roof for three days of networking, business meetings, and highly engaging, and sometimes intense discussions. As a vendor, I was impressed by the quality of the leads we generated. As a new member of the logistics community, I was intrigued by its openness to welcome me. And, as a professional, I was amazed at the honesty and depth of discussions that were held both during formal sessions and in the ample networking opportunities. TOC Europe has set a standard for what I expect exhibitions and conferences to deliver.



Lev Aispur
Head of Sales Department
(Terminal Operating
Systems), SOLVO

We're happy to admit that this year's TOC Europe held in Amsterdam from June 27th-29th was a resounding success for our company. Attendees got a chance to check out our latest offerings for logistics process automation, such as the flagship SOLVO.TOS & SOLVO.WMS systems. Visitors could also get a sneak peak of the SOLVO.TOS 6.0 concept following the successful merger of SOLVO.TOS Container and SOLVO.TOS General Cargo to form a unified platform for all cargo types. They could witness several other new features in action, too, including the all-new WEB Interface, berth planning, KPI dashboards, Verified Gross Mass compliance, and much more. Our stand was a meeting-point with several key clients. Overall, the most important logistics-themed event of the year was a great success for us and our partners. SOLVO would like to thank everyone who attended the conference and is looking forward to an even bigger exhibition next year in Rotterdam!



Norbert Klettner
Managing Director, RBS EMEA

With RBS EMEA being in the container and terminal operating system (TOS) industry for more than 25 years, TOC Europe has once again been one of the biggest and most important industry events. We were so busy meeting partners, competitors, and new customers coming to our stand! This year we saw that also smaller terminals were attending the conference and exhibition, which made us realise that competitive IT solutions integrated with processes and customers are sought-after. Our discussions centred mostly on how smaller terminals can benefit from a TOS solution. RBS's answer to this is TOPS Cloud and the pay-per-TEU model, which are compatible with the terminals.



Michael Geiger
Sales Director, Künz

It is already an established habit that exhibitors present their developments at TOC. We at Künz did the same, e.g. by presenting our solutions featuring the new round-shaped design for main girders. Pictures and models of already successfully delivered cranes (both single and double girder types) attracted high interest into our newly designed and extremely well-visited booth. We would like to thank all who came to see our wide range of innovative products.



Jörg Spiegelhalter
Strategic Industry Manager,
Ports & Cranes, SICK

TOC Europe was very successful for us – there were a lot of decision-makers interested in our automation and digitalization innovations – among many, the MRS1000 multi-layer scanner for collision prevention. We consider TOC a must-do event which we like attending in order to maintain existing networks and make new contacts in the sector.



Ottonel Popesco

President, PEMA

For the Port Equipment Manufacturers Association (PEMA), TOC Europe is an opportunity for fulfilling our mission. This means providing a forum and public voice for the global port equipment and technology sectors, reflecting their critical role in enabling safe, secure, sustainable, and productive ports and thereby supporting world maritime trade. TOC Europe is a close partner of PEMA and the long-standing relationship between the two associations is successful, and provides a mutual platform for both to achieve their goals. The long-standing relationship between the two associations is really successful, I think because it provides a mutual platform for both to achieve their goals. PEMA represents a unified voice for its members, while TOC Europe provides the public setting to strengthen this voice. In attending the conference, our Association reaches out to not only

new and existing members but to the wider sphere of port and terminal industry. It is this presence and communication which helps PEMA in achieving its aim to promote and support the global role of the port equipment and technology industries by raising awareness with the media, customers, and other stakeholders, forging relations with other industry associations and bodies, and contributing to best practice initiatives.

"Collaboration" is not an empty word here. For instance, together with the TOC team we organize an annual PEMA Student Challenge. This initiative invites students to answer the challenge question. Since its inception in 2013, the live final of the Student Challenge has been hosted at TOC Europe, where the three finalist teams present their solutions to the TOC Europe assembly. Judged by a panel of journalists and industry experts, the winning team gets a EUR 1,000 prize. The PEMA Challenge aims to find a "funny" and lively way to expose students to the real business of the ports and terminal world. Providing a unique opportunity for young people to experience the TOC Europe, as well as connect with industry leaders, the Student Challenge is helping to surface emerging talents. PEMA hopes to continue working with TOC Europe, and are committed to making our competition a success. This year we celebrated the milestone of five years of the Student Challenge and we look forward to seeing it grow in the years to come!



Egita Aizsilniece-Ibema

*Head of the Representation in the Netherlands,
Investment and Development Agency of Latvia (LIAA)*

Transport is truly important for Latvia, especially because we have three ice-free sea-ports and an efficient railway infrastructure leading to Eurasian markets. This makes our country very attractive for transporta-

tion and logistics of various kinds of goods, ranging from coal, oil products, timber, and automotive manufacturing products to large quantities of textile, household, electronics, food and other products transported in containers. And it is so important nowadays, when we have the Chinese coming into this part of world. For instance, as a result of a very active work in 2016 and 2017, Latvia has established strong partnerships with the Chinese, Kazakhstani, Russian, Belarusian, Uzbekistani, Azerbaijani, Iranian, and Indian railway companies and manufacturers. Thus, the Latvian logistics sector is able to offer a range of new container train routes between Asia and Europe. The so-called New Silk Road is more than three times faster than sea routes connecting the

same locations, hence it is the most advantageous way to transport fast moving consumer goods. For instance, the road from Eastern China to Riga takes up to 12 days, and the rail from India to Riga – up to 10 days. Moreover, sea routes connecting the ice-free ports of Riga, Ventspils, and Liepāja in Latvia and Scandinavia and Germany allow for reaching most part of Europe in two days. I'm telling all of this to provide the background for what I do, and what I bring to this year's TOC, at the invitation of Extron Baltic. I quickly realized that this is one of the major events in the industry, offering not only exposure to its key players, but also crucial networking opportunities. It was especially important to me, because our agency represents Latvia in the Netherlands. In 2017 our Dutch office relocated from the Hague to Amsterdam, and has been promoting what we call the Latvian logistics hub. Apart from Extron, as many as four Latvian companies attended this year's TOC Europe: Jaunuzeltiņi (a terminal operator), Riga Universal Terminal, NK Tehnoloģija (serving port engineering solutions), and Bleste – manufacturer of cargo handling equipment. Each showcased a really high-quality product line, and I would like to express the hope that more and more Latvian logistics companies will participate in the event in the coming years.



Wouter van den Bos

Founder and CEO, SDC Verifier

For us, it is the second year to visit this exhibition-conference, which is an excellent spot for meeting everybody from the TOC Europe family in one place. And it was indeed a chance to meet our most important customers in the container and bulk handling industry – manufacturers, owners, and buyers of port and lifting equipment. We had good interest in both our FEA engineering consultancy and our software solution SDC Verifier. This year we experienced an especially optimistic atmosphere and we hope to increase our business accordingly. We are so happy to have been here that we're already booked for the next year. See you at TOC Europe in Rotterdam!

featured article

Photos: TOC Europe

The future of the port & terminal technology business

by Rachael White



Rachael White is Content Director at TOC Events Worldwide, where she's been working since 1999. She has been involved in the maritime logistics world since 1987 as a researcher, writer, conference producer and trade association manager.

The 41st TOC Europe show in Amsterdam this year gathered some 3,400 container shipping, port and bulk supply chain executives to discuss the latest industry trends, operational best practice and new technology. Alongside the exhibition, the TECH TOC seminars offered insight into the state-of-the-art in container terminal automation and digitalization.

The seminar included the Leaders Debate, titled *The future of the port & terminal technology business*, which addressed challenges for automated container terminals of the future. Super smart problem solvers will be needed to troubleshoot complex systems issues and manage process exceptions at the automated, intelligent, near real-time container terminal to come – but currently there is precious little guidance or training out there for this new generation of port workers. This was one of the key takeaways from the Leaders Debate.

The seminar's agenda

Moderated by World Cargo News' (WCN) Editorial Director Paul Avery, the speaker panel included Uno Bryfors, SVP at ABB Ports, Antti Kaunonen, Kalmar's President, Dr. Christian Koegl, CEO at Cranes for Siemens, Mika Mahlberg, EVP & Head of Business Area Port Solutions at Konecranes, and last but not least Dr. Yvo Saanen, Commercial Director at TBA. The audience for this session included executives from i.a. APM Terminals, Ashdod Port, Bolloré, Port Authority

of the Cayman Islands, DB Port Szczecin, DCT Gdańsk, Durres Container Terminal, Eurogate Container Terminal Hamburg, Eurogate-Tanger, HHLA, Mersin International Port (MIP), MSC Terminal Valencia, Nempont Container Terminal, Noatum Container Terminal Bilbao, PD Ports, Peel Ports, the Port of Koper, PSA Antwerp, Rempres, Rodaport, and TTI Seattle Terminal.

All panel members agreed, that digitalisation, artificial intelligence (AI), machine learning, and predictive analytics will change the face of container terminal operations in the coming years, alongside robotised and autonomous equipment. However, there are some major issues for the industry to address. Antti Kaunonen stated, "Compared to other industries we are 10-15 years' behind on digitalisation, and now it's all about turning from a hardware to a software company." Yvo Saanen added, "We can become a predictive industry," but, as for now, the industry has "a long history of collecting and poorly using data." Uno Bryfors said, "As an industry, we don't even know how much data we have in our systems today."

“All panel members agreed, that digitalisation, artificial intelligence (AI), machine learning, and predictive analytics will change the face of container terminal operations in the coming years, alongside robotised and autonomous equipment.”

TECH TOC SEMINARS

TECH TOC Seminars Day 1 | Tuesday 27 June

Speakers

Mika Mahlberg
Executive Vice President & Head of Business Area Port Solutions, Konecranes

Dr Christian Koegl
CEO - Cranis, Siemens

Brad Crumbeholme
Head of Engineering, Peel Ports Group

Uno Bryfors
Senior Vice President - Ports, ABB

Michael Bouari
CEO, 1-Stop Connections

Fouad Elbaroudi
Managing Director, AXS Ingenieirie



TECH TOC Seminars Day 2 |

Timing

10:30-12:30
Session
DIGITISATION, AUTOMATION AND INNOVATION: (PART 1)

Speakers

Alexis Pangalos
Partner, Hamburg Port Consult

Priv.-Doz. Dr.-Ing Eva S.
Senior Vice President, INFOS

Kwang Chan
Vice President - Terminal Services, Global Container Terminal

Yumi Eum
Sales Representative, Cyber

Tero Jaakola
Product Manager - ABM

13:00-15:00
Session
DIGITISATION, AUTOMATION AND INNOVATION: (PART 2)

Speakers

Allan Jones
Head of Business Development, Enrique Marché

España
Vice President & Sales

Lars Meurling
Vice President & Marketing, Brionna

13:00-13:30
Session
PLANNING DECISIONS: BETTER, FASTER, CHEAPER

Speakers

Tom Ward
Senior Maritime Planning

13:45-14:15
THIS SESSION IS

Panelists acknowledged that collecting data is one thing, but actively using them to drive digital transformation within the terminal and with supply chain members on the sea- and land-side is something entirely else. Explaining the decision Konecranes made 10 years ago to start putting hardware and sensors on all of its container handling equipment, Mika Mahlberg pointed out that connected equipment provides a wealth of information for improvements to service, design, and manufacturing operations.

Systems integration inside terminals and with other parts of the transport chain remains a huge challenge, too, and standards are sorely needed. According to Uno Bryfors, "automation projects must be based on standards and proven experience. At present, however, this is far from the case, with each new scheme largely custom-built and very much proprietary. Not only is this slowing down industry learning with regard to better project delivery, it can also have a negative impact on ensuring that projects deliver the required performance."

Workshop on automation

Jan Cuppens, Director of Global Engineering, DP World, commented at TECH TOC that terminal automation is simply not delivering according to specifications. Semi-automation delivers, but with far too many workarounds; remote quay crane operation is below expectations and full automation is far beneath. A similar message was delivered at TOC America last year by Anthony Otto, President of Long Beach Container Terminal, who told suppliers that they needed to do much better and deliver on what was promised.

In an editorial published ahead of TOC Europe, Antti Kaunonen identified the lack of commercial standards as a fundamental problem, noting: "In most industries, industrial automation has been standardised already many years ago. Nonetheless, in terminal automation the industry standards are lacking even in the basic technical architectures. As equipment and solution providers, we should do everything we can to facilitate the development of basic standards for terminal automation, but instead we tend

"The panel members stated that the fast pace of technological development is not a barrier to standardization, as standards should be targeted at the data level rather than the equipment level, allowing different systems to speak the same language when they need to interface."

to be protective of our installed base and our own solutions. Thus, it must be a joint effort and the end users should be active in this development, too. I call for similar cooperation to our industry that has been accomplished in the airline industry to define their own requirements to suppliers."

Panelists in the WCN debate, however, thought it unlikely that such broad industry cooperation is possible. Referring to the Terminal Operating System Equipment Control Interface Standard, launched at TOC Europe 2014 by the Port Equipment Manufacturers Association

(PEMA), the panel members confirmed that these had not yet been actively adopted by the industry. “We as vendors cannot really drive the standardisation agenda. This needs to come from our customers,” asserted Antti Kaunonen. The panel members stated that the fast pace of technological development is not a barrier to standardization, as standards should be targeted at the data level rather than the equipment level, allowing different systems to speak the same language when they need to interface. That is the aim of the PEMA document, which proposes an open, standardised interface between terminal operating systems (TOS) and equipment control systems (ECS) for all types of container handling equipment.

The relationship between the TOS, ECS, and other sub-systems has been a perennial topic at TECH TOC for some years now, particularly regarding where the intelligence and decision-making should lie. Not surprisingly, this came up again during the latest WCN debate. “Real time optimisation is coming more at the machine level,” said Uno Bryfors, while Christian Koegl stated, “decentralised machine management is the way forward, with self-optimising, intelligent sub-systems.” He argued that the TOS is concentrated on the container, not the



equipment and said that the modern TOS are “getting like tankers” – big and cumbersome. Although not all on the panel agreed on this issue, there was general consensus that terminal IT needs to be viewed more holistically as an integrated “system of systems.”

A good portion of the debate was about the role of people in this new world of industrialised, automated container terminals. This included the need for a new breed of port operatives, focused on exception management and problem

solving, with a process and systems orientation. Such people hardly exist today, commented Yvo Saanen, and there is little training and development out there to nurture them. Discussing future application of AI in automated terminal operations, Saanen added, “we have to be very careful on this related to safety issues.” Safe integration between robotised and autonomous systems and the human operator is a huge issue that requires much more attention as the industry continues down its path towards automation. ■

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Technology bulks up the bulk!

by **Suzanne Tiago**



Suzanne Tiago is Head of Marketing for TOC Events Worldwide, she has been working in events for the maritime & transport sector for 10 years and has been with the TOC portfolio since 2010.

It's no secret that the bulk market has weathered some extremely tough times over the past decade. Apart from a 2009-2010 "bounce" just after the global slump, average growth has stalled or declined all the way through from 2007 to 2015 across multiple dry bulk commodities, including iron ore, coal, grain, and other minor bulk subgroups.

Just as in other shipping segments, supply has outpaced demand and the result has been a painful slump in rates, with the Baltic Dry Index (BDI) hitting historic lows. Oil and other liquids have also witnessed huge volatility. Nevertheless, automation, unmanned vehicles, and advanced IT are coming to bulk handling and transport, heard delegates at the bulk seminars during this year's TOC Europe.

Low, but stable

With modest growth since 2015, and more discipline on the supply side through reduced newbuilds and more demolition, the dry bulk industry may be about to turn a corner, said Peter Sands, Chief Shipping Analyst for BIMCO. But he also cautioned that the road to recovery will be long and fraught with hazards, not least the industry's ability to maintain capacity discipline—"Make no mistake: shipping is global and the world is awash with tonnage." Sustainable freight rates may finally be in sight and 2019 could be a "turnaround year" for dry bulk although 2019's profitability depends on demand growth at 2.4% in 2017 and 2% in 2018 onwards, coupled with net supply growth not exceeding 15 million dwt in 2017 (+1.9%) and being neutral in 2018 onwards.

Looking specifically to the iron ore market, Peter Sands noted that a key trend has been the conversion of very large crude carriers (VLCCs) to very large ore carriers (VLOCs) for the Brazil-China trade. Some 32 new 400,000 dwt Valemax carriers are due for delivery in 2018 and 2019 for the same trade, but there's no compensation for it by corresponding demolition of converted VLOCs, leading to a potential new glut of capacity. The Valemax class is named after Brazilian mining giant Vale, which developed this vessel concept. Speaking again at this year's bulk seminars, Giselle Dazzi, an industry Improvement Specialist who has been working in the Dry Bulk industry since 2005, said that in her opinion technology, innovations, and processes were key to managing the industry through the current low cycle. "Automation, autonomous vehicles, big data, analytics and the Internet of Things (IoT) could bring us to a new level of competitiveness," she commented.

Existing automation in bulk terminals includes remote and fully automatic operation of stackers, reclaimers, conveyor belts, car dumpers, wagon loaders, and vessel (un)loaders with remote control centres controlling operations up to 1,500 km away. Autonomous drone ships are under development, most recently by Yara International

“With modest growth since 2015, and more discipline on the supply side through reduced newbuilds and more demolition, the dry bulk industry may be about to turn a corner.”

for containerized fertilizer shipments, while Rio Tinto is deploying autonomous haulage trucks in mining operations and developing driverless trains for iron ore shipment. Underwater drones are also set for use in vessel hull inspections. "But perhaps the most important commodity of the future is data, with IoT, blockchain and big data applications all set to transform current operations," added Giselle Dazzi. However, cybersecurity will be key to successful adoption of new data technologies, covering data and intellectual property theft, cyberespionage, control of systems and major attacks that prevent operations.

Bulk terminal automation

For Peel Ports Group, automating steel coil handling at its deep-water Liverpool metals terminal has yielded a 30-50% gain in storage capacity and velocity, reduced labour and "zero damage," said Andrew Grindley, Solution Development Manager at Peel Ports. He explained that the automated system optimizes the layout by directing automated cranes to place similar size coils in defined zones, with put-away, digs, retrieval, staging and housekeeping performed by the cranes without human operators. The 9,290 m² big automated coal warehouse is operated by a dedicated automotive steel handling workforce, said Andrew Grindley, adding that there are inherent health and safety benefits from automated handling.

Apart from automated cranes, Peel Ports is utilising technology such as WiFi and hand-held scanners to boost efficiency, safety, and customer service. Real-time traffic management, live delivery tracking, data-driven resource planning, and collaboration with customers to drive supply chain efficiency based on factual data (including nation stock visibility for customers' cargo), are all critical to the future of modern bulk handling.

Automation is coming to liquid bulk operations, too. Helen De Wachter, Global Leading Functional Expert Bulk Storage & Transportation, BASF, told TOC Europe bulk seminar attendees that the chemical giant is investing in digitalization, automation, and autonomous vehicles for tank container logistics at its headquarters plant in Germany's Ludwigshafen. The facility handles around 20 million tonnes per year and, since transport links account for a considerable share of its operating costs, BASF has focused on how to drive this segment down with a new integrated and automated storage and logistics. Scheduled to open in June 2018, the redesigned plant features world-first automated guided vehicles (AGVs) developed by TOC exhibitor VDL Group, new optimized-for-rail tank containers in place of rail tanks, and a new automated 2,000 TEU capacity tank container terminal. The AGV developed for BASF by VDL is 16.5 metre long and has a payload of 78 tonnes. According to BASF,

the 22 hours currently required for a rail tank car to be delivered from its train station to any of the 150+ loading stations at the site will be cut to just one hour with its new AGVs.

Based on technology utilised in combined transport operations, the new 45-foot and 52-foot tank containers to be used in the automated handling system were developed by BASF and the Belgian tank container manufacturer Van Hool. The BASF class tank containers (B-TC) can be transported using container rail wagons, offering greater flexibility than traditional rail tank cars. The B-TC has a maximum volume of 73,000 litres and a payload of 66 tonnes – similar to the capacity of a chemical rail tank car, and double that of today's typical tank containers. The B-TC can be transported on any kind of railway tracks and can be stacked up to six high. Since July 2017, 90 B-TCs has been in use in Ludwigshafen, with another 550 to be delivered in 2018. The final piece of the puzzle is a fully automated tank container terminal, currently under construction at the Ludwigshafen site. The new trimodal facility will have two automated stacking cranes (ASCs), each with a loading capacity of 75 tonnes, and will be able to handle goods in and out via AGVs, trucks and rail.

The fact is that automation is coming to bulk operations. The bulk itself may be on its route to recovery, with modest growth of transported volumes since 2015. ■

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Interviews

Interview with Guenter Schmidmeir,
VP & General Manager EMEA,
and Bruce Jacquemard,
Chief Revenue Officer, Navis

Technology boosting collaboration

by Maciej Kniter



Guenter Schmidmeir
VP & General Manager EMEA, Navis



Bruce Jacquemard
Chief Revenue Officer, Navis

How can the latest technology serve business? At the first glance, the answer is simple, but it's better to ask the professionals who provide tools for that. We're talking with Guenter Schmidmeir and Bruce Jacquemard to ask about collaboration and Navis' recent activities, as well as make an update to our interview with Andy Barrons from Navis and Robert Inchausti from XVELA, published in *Baltic Transport Journal* 1/2017, and this year's first printed edition of *Harbours Review*.

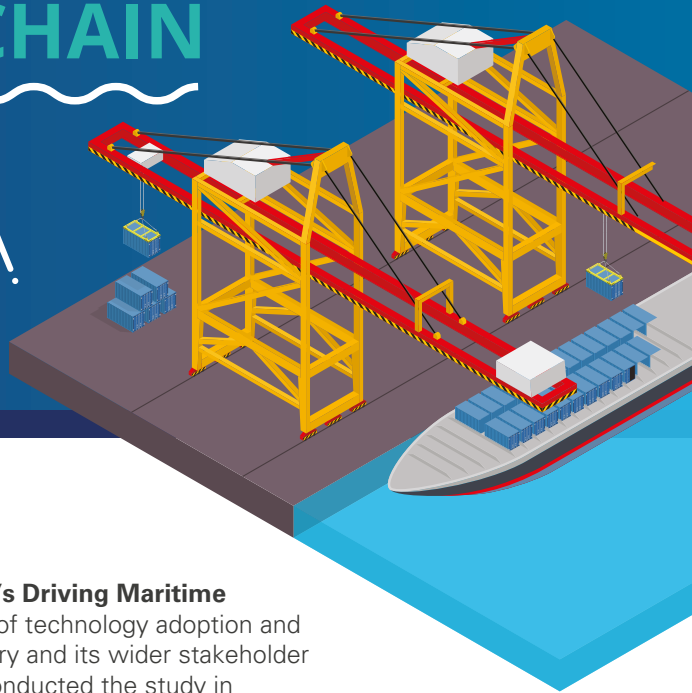
■ **First, could you explain the difference between Navis and XVELA?**

Navis is XVELA's parent company, though XVELA operates as an independent entity. XVELA is the name of both the company and the product. We decided to create a cloud-based collaboration platform that delivers transparency, efficiency, and profitability to a network of ocean carriers and terminal operators – and this is exactly what XVELA is all about. But, since XVELA is intended to work with many different terminal operating systems (TOS), it must be first and foremost neutral. The aim for our platform is to allow both terminals and carriers to see the full stowage picture, improve customer service and reliability, along with capturing substantial untapped savings across the entire ocean supply chain.

■ **And could you share any news of your recent activities?**

On the XVELA front, pilots have been conducted with leading carriers and terminal operators over the past year, and have now evolved to the point where two of the top five carriers are moving forward to a Phase 1 implementation. Although I can't reveal who they are yet, what I can say is that we've had a positive response to the pilots and the progress we've made with the product since then. So there is demand for the initial value of XVELA; namely, collaboration around stowage. Our aim is to encourage terminals to engage as well. They can see what's happening with the cargo while it's being carried from one location to another. By integrating with the TOS, XVELA is able to provide visibility into multiple locations from a central view in real time.

COMPETITIVE GAIN IN THE OCEAN SUPPLY CHAIN



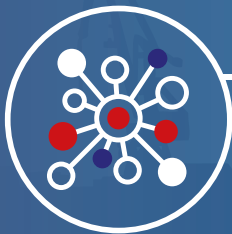
REPORT SUMMARY

"Competitive Gain in the Ocean Supply Chain: Innovation That's Driving Maritime Operational Transformation" is a new study examining the state of technology adoption and collaboration taking place in today's global container shipping industry and its wider stakeholder ecosystem. The Business Performance Innovation (BPI) Network conducted the study in partnership with maritime industry technology leaders, Navis and XVELA.

Our study is based on a global survey of more than 200 executives and professionals from terminal operators, carriers, logistics providers, vessel owners, port authorities, shippers, consignees and other members of the global Ocean Supply Chain. The findings are also informed by in-depth interviews with a variety of industry executives.

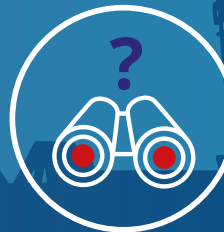
OUR FINDINGS UNDERSCORE THE CRITICAL NEED TO IMPROVE **COLLABORATION** AND **EFFICIENCY** THROUGH **ADOPTION OF NEW TECHNOLOGIES**

A FULLY-FUNCTIONING SUPPLY CHAIN REQUIRES VISIBILITY OF ACTIVITIES AND CONNECTIVITY BETWEEN STAKEHOLDERS, BUT...



82%

FEEL THE LEVEL OF
CONNECTEDNESS
AND **VISIBILITY** NEEDS
TO BE IMPROVED



12%

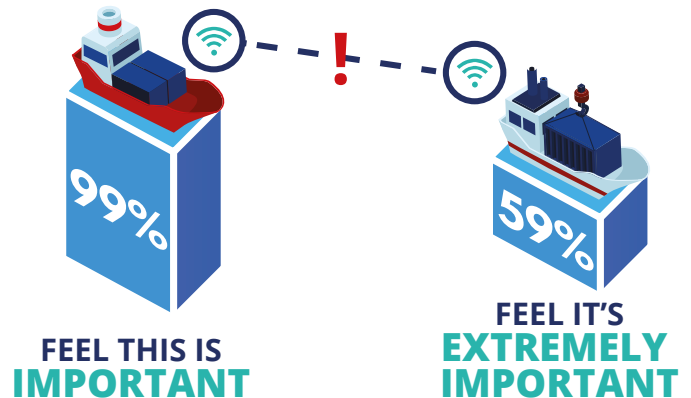
FEEL THERE IS
VIRTUALLY
NO VISIBILITY

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DESPITE HURDLES, STAKEHOLDERS AGREE THAT **REAL-TIME ACCESS AND SHARING OF INFORMATION** IS VITAL:

The findings of this report underscore the critical need for the shipping industry to improve collaboration and efficiency through the adoption of new technology-driven models and processes. Perhaps because it has been preoccupied and constrained by the economic challenges it faces—but also because many of its members are just plain resistant to change—the industry has been far too slow to enter the digital age.

While change may be slow, it is coming nevertheless. Across survey responses and qualitative interviews, there is a clear recognition that improved collaboration and better use of next-generation technologies to improve process efficiency and customer service need to be a priority—and already are for some.



TO OVERCOME THESE HURDLES, KEY TECHNOLOGIES WILL DRIVE THE TRANSFORMATION



53%
BIG DATA &
ANALYTICS



47%
AUTOMATION



39%
INDUSTRIAL IOT
TECHNOLOGIES



39%
NEW SOFTWARE
MANAGEMENT
SYSTEMS



31%
CLOUD SERVICES

THEY BELIEVE THESE TECHNOLOGIES WILL MOST IMPROVE:



65%
OPERATIONAL
PROCESSES



60%
REAL-TIME
DECISION MAKING



58%
FASTER DELIVERY TIME
TO END-CUSTOMER



57%
INCREASED COST
EFFICIENCIES



55%
GREATER TRANSPARENCY
AND VISIBILITY INTO
CARGO MOVEMENT

■ What about security in the so-called cloud?

XVELA follows the Center for Internet Security (CIS) standards for cloud applications. We know what kind of security measures one has to implement around an application, and we are very closely aligned with the CIS standards and recommendations. We also leverage the massive security investment and expertise of Amazon Web Services (AWS) and follow best practices to maintain high standards for the security of XVELA. Definitely, there is always a risk for companies of being affected if a big hacker attack takes place, like the one on June 27th. But implementing proper security controls, such as those recommended by the CIS, can really help minimize that risk. We at Navis also use our own measures in the applications for data security, and we're continuously ramping up our solutions to make them more reliable. Finally one important feature of the cloud – it is not a virtual private network (VPN), it uses a single point of entry, meaning you have more control.

■ Could you say a few words on the ocean supply chain survey you've conducted?

We asked more than 200 companies about their business environment; namely, the shipping industry. Terminal operators, carriers, shippers, and many others were interviewed and 82% of them said that visibility is critical for shipping to get better outcome from operations. Furthermore, 99% of all respondents think that sharing information is important for business, but – get this – only 12% say that they're doing anything about this. So the finding is that there is a cry, an urgent need for this collaboration. And we have a solution, the XVELA collaboration platform. Yet, there are some hurdles to overcome – basically it's a mindset change to make it happen. Organizations, especially in this industry, are resistant to share data because they think it could give up some competitive advantage. They sometimes don't see the benefits coming from greater data sharing across multiple participants.

■ So how can we transform the ocean supply chain through cloud collaboration?

We're trying to integrate business across the ocean supply chain. As Andy and Robert said in the previous interview, Navis acquired INTERSCHALT, a company offering solutions for carriers.

It was a natural step to acquire the market leader in stowage planning solutions and on-board loading computers. Our product, Navis MACS3, is used in over 65% of all container vessels. We can already see the synergy coming out of this – by integrating data from the MACS3 on-board computer in real time, XVELA can provide terminals with a quick evaluation of their load plan from a strength and stability perspective, so they have a much better idea of whether the plan will be accepted by the ship's first mate well in advance of the ship's arrival, potentially eliminating critical delays during load operations. This is a good example of a win-win situation.

■ In our last interview, Andy and Robert talked about your plans for this year. Are any of them already in place?

I can say that it's a very active process at the moment and I think at the end of the year there will be some announcements. This takes time, but you may expect some news in the areas we mentioned in this interview.

Click here to read the interview with Andy Barrons and Robert Inchausti, published in this year's first *Harbours Review* printed edition.



Guy Rey-Herme
CEO, XVELA

We are part of Navis, which is very strong with terminals, and it was very logical for them to develop a platform like XVELA, aimed at connecting ports and carriers. Many industries have done such things over the past 10 years, and now it's time for the shipping industry to invest in collaboration. In our industry, each party impacts the other. For instance, by carriers staying longer at berth. This means that the other vessel that was going to call there at the exact time will have a delay as well. Therefore, shipping is a perfect business for cloud-based cooperation. In the fourth quarter of this year, two top carriers will implement XVELA's Phase 1 – this is a great success. As for technical details, we implement the collaboration service by service. What is more, we work hard on acquisitions. We want to invest more in software, we've already engaged with some companies, but what will be the result – you never know...

As far as the "Competitive Gain in the Ocean Supply Chain" survey is concerned, what is really immediately striking is that 99% of the respondents see the need for knowledge sharing, because they expect that it will improve customer service, reduce some of the costs, and so on. What I see as an advantage is that everyone will be working with the same information at the same time, so there's only one source of truth. This allows for better, more informed decision-making. But technology is one thing, and we need to keep in mind how to run a business – what you do with data, how you make decisions, etc. From my own experience I can say that although every company may use the same data, they have different priorities, their own standpoint, etc. So, XVELA is one platform, that's true, but its users will be working with data in different ways.

Regarding security: of course, with any IT technology, there is always some risk. 100% protection does not exist. But, in the cloud, it is easier to be protected for a number of reasons; one is that you have fewer access points, and to be precise – only one gateway. Secondly, XVELA is following the CIS CSC Standards (Critical Security Controls published by the Center for Internet Security). CIS is a non-profit organization managed by top industry security veterans from government, industry, and academia, and is the de facto standard for cloud security, so this ranks XVELA really high in terms of cyber-security. However, one also has to think what to do if something happens, because you can never guarantee that nothing bad will ever happen. This is why we replicate our database in multiple different locations, so even if one goes down, it's very easy to restart within just a few seconds.

I really think that the future of the supply chain lies in collaboration, and the maritime industry is getting there. In my view, the next step, after shipping companies and terminals, will be inland transport companies to join us as well. We need to create this "trend" of collaboration, then get to work, and start to expand it in some other fields.

As for TOC Europe – it's my first time here, but I have noticed good activity, nice interactions taking place, I see that people start thinking differently. I attended two panels on digital supply chain, and I was asked some very deep questions about the use of data, and the Internet of Things.

Photo: www.pexels.com

From the military to ports

by Maciej Kniter



Chris Mason is Director of Sales for EMEA at Rajant Corporation. Previously Chris worked as Managing Director at Levels Business Consulting, held many positions at BT Global Services, for example Global Industry Practice Lead – Energy & Resources, and Senior Business Development Director – Global Mining, Oil & Gas, as well as was a Business Development Director at ICC Information.

TOC Europe is a harvest time for all port-oriented individuals keen on talks and discussions. Conversations spiced up by many technological topics could be heard at Rajant Corporation's stand, where we conducted an interview with Chris Mason. He told us a lot about the company profile, performance, and vision for the future business.

■ What's in your company's current portfolio?

Rajant is a provider of private wireless networks powered by Kinetic Mesh®, BreadCrumb® nodes, and our patented InstaMesh® software. The technology we offer to the market is highly adaptable, and it leverages the power of real-time information to deliver on-demand critical business intelligence from the field. Such solutions are needed in environments where critical data is the lifeblood of industrial operations. They simply must be delivered from source to destination, in real-time, with low latency and high bandwidth, in dynamic, mobile environments where the lack of data on location and activity not only leads to reduced profits, but also potential loss of life. For instance, in port environments the Kinetic Mesh Network capability offers a mechanism to monitor, control, and optimise terminal operations to increase efficiency as well as maintain health and safety standards.

■ Could you sum up your company's performance in 2016?

Last year was a definite turning point for us, with a very positive trajectory for a couple of reasons. First, we started realizing the benefits of our vertical market expansion strategy. Up and until a few years ago, Rajant's revenue and customer base came from two primary markets – military and mining. But now we are gaining significant traction and customers in ports, oil and gas, public safety, and transportation and logistics. Interestingly, these new industry sectors all have one thing in common: requirements for mission-critical network infrastructure that would secure and support mobility 24/7.

With the opening of our US Phoenix office in 2016, we have an entire team of security engineers dedicated to advancing our Information Assurance agenda across our technology platform. They are assisting us in developing the highest levels of cryptography in the areas for military warfare solutions, as well as for the automotive and connected car industry. As security challenges continue to keep network and communications managers up at night, we are thrilled to have

“The metal containers alone are barriers and create interference for radio communications, which means that in such a dynamic environment, a network that can ensure that such physical barriers do not prevent operational connectivity and efficiency is essential.”



such an advanced team with deep credentials working around the clock to ensure that our Kinetic Mesh networks are secured.

Another factor has been our ability to get our technology in front of more global customers as a result of a formal strategic partnership we entered with the Japanese company Mitsui in 2016. Together we share the vision of advancing network communications for industrial Internet of Things companies, something which is instrumental in expediting customer engagements and setting up technology demonstrations.

On a final note, our eco-system of channel partners has matured and evolved considerably. This maturation has opened new original equipment manufacturer partnerships and is attracting more qualified integrators partners who are best-positioned to leverage our technology to industrial enterprises like port terminals that demand it.

■ **Is there anything particular in Rajant's portfolio for this year?**

This year we added a new product to our solutions portfolio – the SlipStream. In order to better meet the growing demands of industrial applications, as well as autonomous unmanned aerial and ground vehicles, we developed a unique wired BreadCrumb® that allows our customers to deploy a high throughput interface between their wired network and their existing Rajant Kinetic Mesh network. When properly designed into the network, customers can more than triple their throughput and are more capable of supporting additional video surveillance and automation functions demanding added capacity. We built this product based on

direct feedback from our customers. They now have a reliable and proven option for expanding network throughput rather than having to resort to a costly and unproven LTE alternative.

This year we have also enabled aerial broadband connectivity by introducing drones onto our Kinetic Mesh network. Now our customers can leverage unmanned aerial vehicles (UAVs) to accomplish tasks and applications more efficiently from the sky and at a substantial cost savings.. This is both an interest and a requirement that we are seeing in the ports and terminals today.

■ **What do you precisely do for ports?**

Ports are great environments to showcase the characteristics of a Kinetic Mesh® network. In common with most industrial processing applications, efficiency in processes provides the competitive edge in operational environments. Port locations include the co-ordinated and rule-driven movement and storage of containers – according to a complex, dynamic plan to serve the customers shipping and transferring containers. The metal containers alone are barriers and create interference for radio communications, which means that in such a dynamic environment, a network that can ensure that such physical barriers do not prevent operational connectivity and efficiency is essential.

Furthermore, container port environments are not radio-free environments. The ships that carry containers have their own radio networks, radar systems, and the flat open nature of modern container terminals means that radio interference from neighbouring operations and municipalities adjoining the port is ever-present and needs accommodating in

any reliable wireless system. Rajant's multi-radio and dynamic routing technology adapts to localised interference and ensures that low-latency and high-bandwidth is maintained.

■ **What is your vision for Rajant for the next decade?**

We believe 2017 is aligning with our 10-year vision. We have witnessed a pretty significant transition in terms of what our customers want from their networks, and those demands continue to grow in depth and complexity. Not only are industrial enterprise networks growing in size and function, they are also incorporating autonomous applications and robotics. Our 10-year vision is one that enables us to continue developing our industry leading InstaMesh so that it can bring additional intelligence and autonomous decision making to growth sectors such as Industry 4.0.

■ **Any comment on this year's TOC Europe?**

TOC Europe was a conference we are very keen to attend, given significant recent successes in securing port deployment contracts and the increasing number of enquiries from operators globally. The number of visitors to the stand and the interest shown in the technology is excellent. Not only did our booth staff have little time for breaks for food and drink, but after the second day of the event we had to have additional business cards printed – such was the level of visitors and interest in Rajant solutions. I can also say that it is one of the few trade shows I have staffed, where in the first day we were asked to produce an outline design for a container port with associated rough order of magnitude pricing.



IT to keep ports working

by **Maciej Kniter**



Peter Lundgren works at JLT Mobile Computers as Sales Director. In the past Peter held higher positions at IBM and Telia.

IT companies are growing rapidly. Some, like JLT Mobile Computers, come from surprising backgrounds. Once a supplier of hardware control systems to the forest industry it is currently providing hardware and software for ports, and other industries operating in harsh environments. We are talking with Peter Lundgren about the company's recent projects and future plans, conquering new markets, automation as well as the TOC event itself.

■ **What was your company's performance last year?**

It was a record year for us. Turnover increased by more than 50%, which is a very healthy growth (for detailed figures, please see our quarterly reports which are easily accessible on our website). To give you a couple of examples, we won a big project in the United States, where competition is much higher than in Europe; namely, a million-dollar deal with one of the largest transportation service providers in the world who deployed our JLT1214P vehicle computers in cross-dock forklifts at sites across the United States. We also started an interesting project for ICTSI in Basra, where we have delivered 50 mobile computers. The temperatures here can soar to well above 50 °C in the driver cabins, yet the customer tells us that our rugged computers are running without any problems. That's the best proof that our products are of good quality! It's true that we have a nice and steady growth in ports,

with a visible trend that customers are looking for equipment made in Europe. I can give a quick example – we talked to one customer who bought equipment from an Asian supplier two years ago; now they're closing down and the customer is left with almost new equipment without service, spare parts, and so on. In comparison, we at JLT Mobile Computers keep spare parts for our products for at least 5 years, often as long as 10 years or even more. And this is our commitment to our customers; we want to keep things working.

■ **Could you name some fields you want to expand? I mean both conquering new markets, and some new products you offer.**

In terms of regions, we are already present globally, from Europe and the USA, to China and Iraq, so I don't see any big challenges in terms of geography. However, we see the biggest increase rather in your second point. I've been in this business for some years now, and my observation



is that the companies, or more accurately, brands, are concentrating. I noticed at least four or five instances when a big company is either taken over by another, or it simply goes bankrupt. On the product side, one new trend that we see is customers asking for new functionalities to be added. In this case we serve them with our mechanics, electronics, software, we increase reliability, adapt our computers to the Internet of Things, etc.

■ **What's the role of the container business in all of it?**

Seaports are crucial for us, but we also begin to see a growing interest from the inland intermodal terminals. This is because our technology can be successfully applied inland as well. Traditionally, companies are focused on one sector, but we serve all – from dry indoor warehouse environments to offshore. And the same happens in ports, more and more ports handle different types of cargo nowadays.

■ **How does automation influence your products?**

Automation is a process. It is not an overnight event. Some devices will work without constant control, but I'd like to say something different, it's not only the job of the supplier, it's both sides that participate in automation. The purchaser is often forgotten, but they must strictly specify their requirements. We've been in business

for some 20 years, starting from supplying rugged computers to the forest industry. We used our technology later in mining, offshore, container business, and seaports in general. For me automation means the adoption to different requirements.

■ **How has the market changed over the past 10 years?**

We are involved in many different industries, and since the markets are developing differently that's a bit of a tricky question. In agriculture, for example, the IT sector is developing really fast. We cooperate with a company in Belgium that inspects carrot seeds on farms. A camera does the image analysing, and the bad seeds are taken away, so only good ones are left. Solutions from ports and terminals can be applied even there!

■ **Considering what you have told us, what are your thoughts on this year's TOC?**

It's a great show to attend as the maritime business is developing very rapidly. This is the fourth time we decided to come and we don't regret doing this. We were very pleased to see our old friends here, and also to meet new prospects. TOC has always been focused on technology, that's quite natural, but this year there were a lot of automation and IT-related products. That's good; the ports are changing, and that is also contributing to changes in the other sectors. All of it is linked together!

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