

Harbours review

Modern era container terminals

EUROPEAN PORT SECTOR FORUM

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Are box terminals lagging behind?

by Erik Lampinen

Business Development Manager at Hogia Logistics Solution



Working as BDM at Hogia Logistics Solutions, Erik Lampinen is passionate about bringing Hogia TOS from their Scandinavian home turf to Europe and beyond. With a recent background from Middle East, Erik joined Hogia Logistics Solutions during 2014, bringing a genuine interest of the exciting world of intermodal- and port terminals and an extensive experience within the Logistics industry to the table.

Innovations – or a lack of them – in modern container terminals is somewhat a contradiction. The idea of the container itself, a standardized and global solution for transport of goods, requires a long-term mindset of seamless solutions for the end-to-end process. In other words, a container *is* innovation. But is it in fact still so?

When it comes to box handlings, no important player in the industry is resting on its laurels. In the wake of implementing the new EU TEN-T policy, heavy investments have been made or are in the pipeline for the coming decade. Add to that all the grandiose plans where basically everyone is fighting for the same volumes and it becomes clear that innovation must be about operational efficiency, better structure and cost-savings in order to stand out from the crowd, survive fierce competition and grow.

Old habits and internal focus is holding us back

However, imagine the opposite: an ever-changing “development” of the container, its dimensions, shape and materials. Such scenario would create chaos in ports and intermodal terminal operations worldwide. At the time of loading a vessel or truck the situation would soon be unmanageable and the container era would probably face a sudden end.

Many box terminals I’ve visited during my travels around Europe have made substantial

investments in new handling equipment such as e.g. reachstackers, in freshly paved yards and top-of-the-line warehouse solutions. Less attention has been paid to the soft infrastructure such as Terminal Operating Systems (TOS), which surprisingly often is an outdated in-house developed software, generated some 10 years ago – light years in the IT business. Neither has any review of the organisation been done lately – namely, who’s actually doing what, where and for whom. Quite a few companies are stuck in old habits and focus on internal issues, inside-out, instead of applying the modern times’ customer’s point of view, outside-in.

Hardware can only do so much

As a TOS producer, innovations, efficiency and effectiveness are part of the company culture, our genes so to say. We develop software that is associated with best-practice processes which in turn create an efficient and top-down modern terminal at all levels.

Implementing a modern TOS at a terminal, and using its features correctly, triggers

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improvement of local processes. The terminal can handle increasing volumes with existing resources, or reduced costs per convenience. It also creates a value of simplified and better performance monitoring, improved cash flow, etc. But maybe it's best to let the numbers do all the talking.

First, production. Thanks to software-backed operations, increased volumes by 30% in an annual volume of 100,000 units would provide 30,000 additional containers per EUR 20 each, corresponding to an increase in revenue of EUR 0.6 mln annually, based on existing resources in staff and equipment.

Second, staff. A reduced load on operational staff with 20% savings on annual wages, or alternatively the number of overtime hours reduced and the cost of additional staff avoided. Streamlining administration with 80% savings due to automated processes and integration with internal and external stakeholders, avoiding the current extended use of worksheets. Through integration and automation efficiency can be created, freeing up resources for use elsewhere in the organization.

Third, service and maintenance. Utilities 20% savings on an annual service cost of

EUR 25,000 for a reachstacker, equivalent to EUR 5,000 per reachstacker; a regular-sized terminal will multiply such savings. This calculation is based on service (small and large) and hours of operation. There's always a possibility of better planning to streamline loading and unloading. A reduced number of hours of operation also gives a higher resale value.

Fourth, fuel costs, with 30% savings on an annual fuel cost of EUR 35,000, corresponding to EUR 10,500 per reachstacker (this calculation is based on actual information and hours of operation). Here's also a possibility of better planning to streamline loading and unloading, reducing the number of idle hours and search for units.

**“
Reduced hours and more
efficient operating hours
enable the container terminal
to meet increasingly stringent
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Fifth, the environmental impact. Reduced hours and more efficient operating hours enable the container terminal to meet increasingly stringent environmental requirements from society and policy makers.

Last, but not least, I cannot stress enough the importance of overhauled processes – only with a holistic point of view of your business, can you achieve synergies resulting in running a modern terminal, and doubtless, it requires an innovative mindset as well as investments in resources and time. But the idea is straightforward at all times – software can boost hardware, just give it a shot. ■



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More innovations coming

by **Wojciech Szymulewicz**

Operations Director, BCT – Baltic Container Terminal in Gdynia



Previously Wojciech Szymulewicz was PICTSI's Regional IT Director for the Europe, the Middle East and Africa region, carrying out numerous development projects in container terminals, among others, in Poland, Georgia, Croatia, Syria and on Madagascar.

With the existing technologies and solutions, expecting a terminal to achieve an average gross productivity of 40 operations of a ship-to-shore crane per hour is not chasing the sun. This is about 100% more than 10 years ago. A yard productivity level in excess of 80,000 TEU from each hectare per year is also achievable. Cargo handling automation may reach a level of 100% – there is no area within terminal operation where robots could not take over successfully.

a container terminal is a meeting point of logistical chains representing many different sectors of the national economy. The terminals' cargo handling capacities, stability and reliability of their services, their efficiency and productivity determine the competitive strength of the whole economic system. With the growing role of the global economy and progressing containerization, the pressure on enhancing port capacities increases. The potential of container terminals can be improved in two ways. Firstly, by investing in port infrastructure, building new or expanding existing terminals. Secondly, by enhancing the performance of existing terminals through improving their logistical processes, implementing new technologies, process innovations and technical solutions.

Innovation is usually more cost-effective than building new wharfs or yards, especially in ports where there is simply no space for expansion. Furthermore, new

terminals are also designed in a manner allowing for full or partial cargo handling automation (automated gantry cranes, unmanned horizontal transport vehicles, automatic gates, etc.). This is the reason why container terminal operators across the world are intensely looking for innovative solutions to improve their operating performance. Those that don't, linger behind and finally the bottom falls out of the market. The industry incessantly generates new ideas – innovation seems to have no end, wharf and yard productivity limits (TEU per 1 m of the wharf and TEU per 1 sq m of the yard) expanding all the time.

We are pleased that innovation is becoming clearly environmentally-oriented. All modern solutions are designed to reduce pollution and improve energy efficiency through technologies (electric motors, LEDs, etc.) and improvements to operational processes (enhancing equipment performance indicators, eliminating losses and ineffective performance owing

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We are pleased that innovation is becoming clearly environmentally-oriented.”



to advanced planning systems and operating simulations). Since the first year of implementing an ISO 50001:2011 certified energy management system at Baltic Container Terminal (BCT), owned and operated by ICTSI, the innovations deployed within the system yielded energy savings close to 20%.

All stakeholders agree that safety of work is one of the objectives of innovation. At a container terminal, occupational risk is particularly high, therefore any change or innovation needs to improve existing occupational safety standards. The use of scanners or automatic detectors of radiations at goods control in ports is an excellent example. Automation of cargo handling operations aimed at eliminating any physical human presence makes any cargo-related work much safer. The on-going BCT project of gantry process automation can be given as an example here. Our solution – a system of cameras for automatic identification of containers – will eliminate the hazards associated with the presence of employees in direct proximity of a tractor unit or a railroad car. The driver may undergo the entry or exit transaction safely without leaving the cab, using an interactive kiosk installed at the cab window level.

There are two categories of innovation: product-related – purely technical, associated with the use of upgraded technologies offered by suppliers and process/organization-related – involving improvements to operational processes, including also innovative information systems and expert systems. The former are usually capital-intensive, while more defined and easier to implement. Examples include eRTG or hybrid tractor units. Projects combining product innovations and process innovations represent the greatest challenge – they are most complex, but the effects may definitely alter the efficiency of the terminal. Precise planning and using its resources in an efficient manner is a demanding task for any terminal, considering the variability of circumstances (changing ship rotation, congestions, motor car traffic, emergency situations, weather, etc.). BCT has developed an innovative resource planning system (equipment quantity/types and manning per shift) integrated with TOS, unifying and automating the process from the service order, through resource planning, execution and clearing, based on the self-regulating mechanism of the Deming's PDCA (Plan-Do-Check-Act) cycle. Owing to its structure and logic, this innovative system encourages our personnel to continually improve the process and practices. Consequently, BCT distinctly surpasses other terminals

in terms of cost-effectiveness and productivity, even if they represent similar technical standards.

Life abhors stability – more innovations are coming. High storage design ideas are seriously being taken into account for container terminals (similar to automated pallet stacking systems), along with container drones, floating container yards, smart containers (on-line tracked) and many other solutions. This is a fascinating process which cannot be halted. We have to get used to that in a globalized world changes are a permanent thing and the future belongs to those

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At a container terminal, occupational risk is particularly high, therefore any change or innovation needs to improve existing occupational safety standards.”

who do not fear and know how to benefit from innovation. ■





The limits of innovation

by **José Andrés Giménez Maldonado**
and **Eduardo Olmeda Noguera**
Valenciaport Foundation

Since 2005 José Andrés Giménez Maldonado works in the team of the Valenciaport Foundation developing innovation research, cooperation and consultancy projects focused on the port-logistic and maritime transport fields, with the purpose of increasing the innovation capabilities of the Port of Valencia.



Prior to joining the Valenciaport Foundation in 2014 and working on energy efficiency projects at Port Container Terminals, Eduardo Olmeda Noguera gained an MSc at Purdue University. Already during his studies he has been collaborating as a Teacher Assistant and consultant engineer involved into sustainable construction and certification projects.

Freight transports and their logistics infrastructure are essential for the EU. Their impact on European citizens' quality of life and competitiveness of the Community's economy are of fundamental importance if the EU is to defend and strengthen its leadership in the future. Therefore, promoting innovation, efficiency and integration of sustainability into freight transports and their infrastructures is an issue that has to be supported and addressed in the short- and medium-term by all the involved economic and institutional stakeholders.

Ports comprise a key part of the global transport and logistic chains and, in particular, container terminals are essential elements of the network that facilitate the intermodal split between the maritime and the road & rail modes of transportation. Thus, innovation at container terminals is a key factor for improving efficiency of port operations, productivity and sustainability both from environmental and financial perspectives, as it simply pays off to have a competitive edge.

container terminals in Valencia, Livorno and Koper.

“
The project addresses energy efficiency through the use of alternative fuels & smart energy management to improve sustainability and efficiency in operations and equipment at European container terminals.

Data for green change

That's why the ports of Valencia and Livorno are developing the TEN-T co-funded SEA TERMINALS project which stands for Smart, Energy Efficient and Adaptive Port Terminals. This initiative is a natural follow-up of the GREENCRANES project, a successful sustainability collaboration that was undertaken at port

The project addresses energy efficiency through the use of alternative fuels as well as smart energy management to improve sustainability and efficiency in operations and equipment at European container terminals, thus reducing greenhouse gas (GHG) emissions within the port environment. A purpose-developed software platform,



the Smart Energy Efficient Management System (SEAMS), will monitor operations and energy consumption of port machinery, facilitating the evolution of terminals

the operative and energy profile of each piece of equipment at any given time.

Apart from the SEAMS platform, other innovative prototypes will be tested in a real-life environment. The Port of Valencia will test a fully electric terminal tractor, an eco-efficient reachstacker and empty container handler, as well as a dynamic terminal illumination system, whereas the Port of Livorno will benchmark a dual-fuel LNG/diesel rubber tyred gantry (at the Darsena Toscana Terminal) jointly with a mobile LNG supply station specifically designed for port operations. In general, Livorno in the framework of the SEA TERMINALS will merge LNG operations at its port – the Offshore LNG Toscana Regasification Terminal will provide bunkering services for port machinery and vessels, thus creating an LNG supply network in the port area.

All in all, the SEA TERMINALS' vision of innovation at container terminals aims at improving the existing services and bringing creative solutions in order to solve actual problems related to energy efficiency, productivity, and operations from sustainable, environmental and financial perspectives. A lot of real-time info gathering and afterwards data-mining awaits before we can introduce the best green practices for wider use, but the benefits are there for taking and it would be a real waste not to reach out and grab them. ■



towards a low-carbon operative model by helping their operators in implementing energy efficiency measures. In order to do that, a special Black Box will be mounted on freight handling machinery, feeding SEAMS with real-time data on

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REVIEW

Container pick-up using e-signatures

by Maxim Maximov
Commercial Director, SOLVO



Maxim Maximov joined Solvo in 2004 as project manager. From 2006 until 2014 worked as the head of the analytics and consulting department. In 2014 Maxim was appointed a commercial director at Solvo. At present he's one of the leading experts in information technologies for ports logistics at Solvo with more than 20 years' experience in the field.

“Time is money,” the saying goes. While having a chance to axe down unnecessary formalities, which would in turn result in cost savings, who would not seize such an opportunity? Automation – and e-automation in the case of container terminals – is the new black, be it for security issues (e-signatures) or pre- and on-site operations. If implemented accordingly, handling containers is as simple as two clicks and off the trucks go.

One of the main goals of implementing the information management system at container terminals is a reduction in paperwork. In some cases, it is not possible to entirely eliminate the usage of paper as it may be required by law. However, certain situations could arise when transition to paperless documentation is possible and not merely justified by the conservation of paper. More importantly, it could present a significant advantage for all business process participants. One such example which has been successfully implemented in practice is the export of containers using electronic authorizations with electronic signature verification. Leading maritime container terminals of Saint-Petersburg are currently using e-authorizations signed with e-signatures for the pick-up of import containers at the port. Among these is our client, ZAO Container Terminal Saint-Petersburg (CTSP), which I will use as an example to analyse the effectiveness of this technology.

Electronic signatures have been used in Russia since 1994, when the main communications security branch of the Federal Agency of Government Communications and Information developed the first Russian e-signature standard – GOST R 34.10-94, which was later supplanted by a new standard, GOST R 34.10-2001. Today, any issue involving the usage of electronic signatures is regulated by federal law, RF No. 63-FZ “On electronic signatures” from April 6th, 2011. The introduction of a given technology at CTSP was initiated by company management to reduce the risk of forgery and, correspondingly, to eliminate the issue of cargo to unscrupulous carriers or violators of the law as well as speed up document processing at the service centre.

The automation of technological processes and other processes related to documentation and record-keeping is performed at CTSP with the help of a complex information management system, SOLVO.TOS. This system includes a web-portal feature, through which



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forwarders and CTSP's clients can view information regarding their containers, file truck visit requests, and formalize authorizations for container pick-up. To formalize an authorization, the forwarder must log into the CTSP web-portal through the Internet, where he must select the required container from a list of containers that have been nominated for their shipping line, and then register the authorization for a driver (physical person). Due to the fact that all drivers and trucking companies must pass preliminary accreditation, this process can be completed with two clicks: the forwarder selects the driver from a list and presses "Create authorization text." The authorization validity period, as a rule, will correspond to the time period allocated for the release of the shipping line. The only thing left now is to sign the authorization using an e-signature – which is also done right on the web-portal.

In order to formalize an authorization with an e-signature, the forwarder must conclude an agreement with the certification centre beforehand. Within the context of this agreement, the forwarder receives a signature key certificate, which is used to validate authorizations with an e-signature. After the forwarder has signed the authorization on the web-portal, its status is changed to "Verifying." Meanwhile, the signature, its expiration date, etc., is checked by a certified software program. This procedure can take an average of 3 to 5 minutes for each authorization. The given system achieves a high level of security since, in addition to the electronic key, the forwarder must also use a web-portal username and password (the web-portal itself is secured against automatic registration) to access the web-portal information, and must also be approved in the SOLVO.TOS system kernel.

The forwarder can only register a truck visit request for the pick-up of a container on the web-portal if the authorization has been verified. The management system makes it easy to configure rules for each forwarder individually and whether he will use electronic authorizations with e-signatures or the more traditional method. In the former case, the driver arriving at the container terminal must have a passport to be processed at the service centre. In the latter case, he must obtain a validated paper authorization from the forwarder in advance, which translates into an additional hassle and paperwork not only for the driver and the forwarder, but for the container terminal as well. ■





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Rotterdam's Boxreload

The Felixstowe Dock and Railway Company together with the Erasmus University of Rotterdam are undertaking tests on an IT freight tool, Boxreload, on competing hauliers operating in the Rotterdam area. Boxreload is designed to improve truck schedules in ports by reducing the number of lorry journeys, freight operating costs and fuel usage. The environmental benefits of successful implementation include cuts in carbon emissions, whereas additional business gains – a reduction in traffic in the port's congested areas. The project's results will be shared widely within the transport industry. Previous studies on Boxreload have already demonstrated that the solution works from a technical perspective and has business benefits. Rotterdam's project, to be completed by end of December 2015, will cost approx. EUR 1.14 mln and is co-funded with EUR ~570,000 from EU funds within the priority 'Decarbonisation/substitution or environmental cost reduction' under the TEN-T Annual Call 2013.



Photo: Freek van Arkel

Ravenna's Fast Corridor project

Ravenna Port is preparing for a market-oriented study and pilot deployment of an ICT-based system, designed to speed up the commercial, operational and customs controls of trucks and trains entering and exiting the harbour. The "Port of Ravenna Fast Corridor" project's implementation consists of a two-step procedure – research on the system's efficiency to provide guidelines and technical as well as functional requirements, followed by tests on three harbour gates connecting Ravenna to the main rail and road networks. The study will look into the interoperability between the port's electronic platform and the ICT systems of the inland road and rail networks. The chosen ICT solutions are designed to allow the identification of transiting vehicles, containers and RFID seals for a faster control procedure.

The new system is to support the development of a Single Desk Customs and the National Logistics Platform programme. Moreover, it aims at integrating the systems for monitoring, evaluation and logistics management, incl. improving risk assessment and decision support, as well as the development of electronic data exchange. The total cost of the project amounts to EUR 1.84 mln and is co-funded with a sum of EUR 900,000 by the European Union as part of the TEN-T Programme.



Photo: Wikimedia Commons



Photo: Ravenna Terminal Passeggeri

Reshufflings at Black Sea box terminals

A total of 2.6 mln TEU (excl. transshipment) was handled in 2014 at the Black Sea container terminals of Ukraine, Russia, Romania, Georgia and Bulgaria. Out of the overall figure, loaded containers amounted to 1.85 mln TEU, marking an increase by 0.6% year-on-year in 2014. Imports accounted for 58.5%, while exports for the remaining 41.5%. With over 0.5 mln TEU, and despite a drop by 12.9% yoy, Ukraine still leads the turnover of full containers in the Black Sea chart, followed by Russia (0.48 mln TEU; +3.3% yoy), Romania (0.42 mln TEU; +9.1% yoy), Georgia (0.26 mln TEU; +13.4% yoy), and Bulgaria (0.15 mln TEU; +8.8% yoy).

However, reshufflings took place among the top regional loaded box seaport container terminals. The Constantza South Container Terminal of DP World remained in the prime spot (18.68% of market share), but HHLA's 2nd in 2013 HPC Ukraine (Odessa) dropped to a 5th position (10.08%), replaced by Georgian APMT Poti (14.75%), which advanced from a 3rd spot. Russia's Novoroslesexport (11.38%) and NUTEP (10.15%) are now in a 3rd and 4th position, respectively.

On the other hand, no changes resulted among container shipping companies serving the market in question. The Top 5 are comprised of MSC (24.08% of market share), Maersk Line (21.19%), CMA CGM (10.44%), ZIM (8.96%), and Arkas Line (6.9%), altogether governing over 70% of the market.

Container handlings¹ at the Black Sea ports of Ukraine, Russia, Romania, Georgia and Bulgaria [TEU]

Country	2014	2013	Yoy	Market share
Ukraine	552,284	634,359	-12.9%	29.78%
Russia	475,679	460,570	+3.3%	26.65%
Romania	415,743	381,135	+9.1%	22.42%
Georgia	255,958	225,756	+13.4%	13.80%
Bulgaria	154,959	142,461	+8.8%	8.35%
Total	1,854,623	1,844,281	+0.6%	

Source: Informall; remark: ¹ Statistics exclude empty containers



Flat year for the Top 10 Baltic box ports

The Baltic Sea region's container majors last year handled a total of 7.83 mln TEU, marking a minimal year-on-year increase of 0.05%. The Baltic Top 10 chart stayed at the same level as in 2013 chiefly thanks to the seaports in Gdynia (+16.4% yoy) and in Klaipeda (+11.8% yoy). These results countered the drops in St. Petersburg (-5.5% yoy), Gothenburg (-2.5% yoy), Hamina-Kotka (-8.3% yoy) and in Helsinki (-1.2% yoy). In addition, both Gdynia and Klaipeda advanced in the Top 10 chart; Klaipeda overtook Helsinki and Aarhus, whereas Gdynia landed a bronze medal spot by pushing down Gothenburg.

Top 10 Baltic container ports' volumes [TEU]

No.	Port	2014	Yoy
1	St. Petersburg	2,374,876	-5.5%
2	Gdańsk	1,212,054	+2.9%
3	Gdynia	849,123	+16.4%
4	Gothenburg	836,631	-2.5%
5	HaminaKotka	574,982	-8.3%
6	Klaipeda	450,428	+11.8%
7	Aarhus ¹	416,612	+2.7%
8	Helsinki	401,000	-1.2%
9	Riga	387,603	+1.7%
10	Kaliningrad	325,189	+0.8%
	Total	7,828,498	+0.05%

¹ Estimated



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NAPA ports: 1.84 mln TEU handled altogether in 2014 (+9.6% yoy)

Since its foundation in 2010, the North Adriatic Ports Association (NAPA), made up of Koper, Rijeka, Trieste and Venice, has increased its combined container turnover by 43%, from 1.28 mln TEU to 1.84 mln TEU. Taking stock of the results achieved so far, this year's general assembly meeting of NAPA reaffirmed its intention to continue common activities focused mainly on promotional and institutional issues. Additionally, the ports' presidents signed a new Memorandum of Understanding in which all harbours confirmed their mutual interests in supporting the future development projects of each port (railway and inland waterways, use of LNG, implementation of low emission solutions, among others) in line with EU guidelines and the Community market's needs.

NAPA ports' volumes

Port	2014	Yoy
Container traffic [TEU]		
Koper	674,033	+12%
Trieste	506,007	+10.3%
Venice	456,068	+2.1%
Rijeka	192,004	+15%
Total	1,835,960	+9.6%
Freight traffic [mln tn]		
Trieste	57.15	+1%
Venice	21.8	-10.5%
Koper	19.0	+5%
Rijeka	9.0	+3.9%
Total	106.95	-1%



Dublin's new Q1 freight turnover record

Ireland's Port of Dublin handled a total of 7.8 mln tn of cargo during this year's first quarter, advancing by 5.3% year-on-year. The result is the best one in 10 years' time and surpasses the previous Q1 record from 2007 by 3%. Altogether 1,642 ships called at Dublin in the period in question, serving 4.7 mln tn of imports (+6.9% yoy) as well as 3.1 mln tn of exports (+3% yoy). Eamonn O'Reilly, Chief Executive of the Dublin Port Company, commented on the turnover: "This follows growth of 7% in 2014 and 3% in 2013, putting Dublin back on our Masterplan's growth trajectory which will see volumes double over the period from 2010 to 2040. Our current plans are centred on the Alexandra Basin Redevelopment Project which we hope to commence during 2015. In addition to providing additional capacity for cargo, this project will allow us to bring the world's largest cruise ships right up to the East Link Bridge. We are expanding the capacity of Dublin Port to cater to future growth with a focus on working within the existing footprint of the port and maximising the use of existing port lands. Our plans include the lengthening and deepening of the port's berths and shipping channel and the redevelopment of existing lands for more intensive cargo handling."

The Port of Dublin's volumes

	Q1 2015	Yoy
Imports	4,687 thou. tn	+6.9%
Exports	3,140 thou. tn	+3.0%
Total	7,827 thou. tn	+5.3%
Ro-ro traffic	207,042 cargo units	+7.2%
Container traffic	146,156 TEU	+7.3%
Vehicles	32,917	+38.8%
Ferry passengers	277,269	+5.0%



this issue's port



By throughput of cargo Riga is the largest Latvian and the Baltic States' port, handling approx. 1/5 of the region's total turnover.

Port of Riga

The Port of Riga is an important hub of freight transportation corridor that links goods' production and consumption markets in the EU and the CIS countries.

The Port of Riga is strategically connected to the TEN-T road and rail network, as well as to the European Motorways of the Sea, providing efficient use of different modes of freight within the transport chain as well as cost optimization. The shorter distance advantages of Riga compared to its neighbouring ports ensure the best conditions for development of economic relations. Latvia's border with Russia and Belarus is a major factor for development of sustainable and mutually beneficial business relations.

The Freeport of Riga is a multifunctional port; it is ready to handle all types of cargo from various regions. In 2013 cargo turnover at the port reached 35.5 million tonnes.

The Freeport of Riga offers year-round navigation.

Riga port's key parameters & statistics

Technical parameters

Total port area	6,348 ha
Land area	1,962 ha
Of which rentable sites	445 ha
Water depth	16.0 m
No. of quays	114
Total quay length	18.2 km

Statistics (2014-2013)

	2014	2013	Yoy 14/13	
TOTAL	41.08 mln tn	35.47 mln tn	+15.8%	
Dry bulk	23.72 mln tn	21.57 mln tn	10%	
Liquids	10.28 mln tn	7.11 mln tn	+44.6%	
General cargo	7.07 mln tn	6.78 mln tn	+4.3%	
Incl.	Containers	387,603 TEU	381,099 TEU	+1.7%
	Ro-ro	92,315 cargo units	111,068 cargo units	-16.9%
Pax	737,865	837,665	-11.9%	
Ship calls	3,797	3,850	-1.4%	



this issue's port



Founded 23 centuries ago, the TEN-T core port Thessaloniki is the largest transit-trade port in Greece and one of the largest harbours in the Aegean Sea basin.

Port of Thessaloniki

The Greek Port of Thessaloniki is situated in the northern section of the eastern Mediterranean Sea, inside the Bay of Thermaikos and west of the city centre. Founded 23 centuries ago, it still fulfills the role of the most important harbour for the Macedonian region and one of the most important in south-east Europe, serving approx. 15 mln consumers area.

The port offers six piers with 27 quays (totalling 6.2 km), able to manage all types of cargo (incl. 150 ha of fuel storage space) as well as passenger traffic. A natural channel of substantial depth enables any ship to berth at Thessaloniki.

Thessaloniki is a TEN-T core port, a part of the Orient-East Med Corridor, located also at the crossroad of the east-to-west Egnatia Motorway and north-to-south PAThE Motorway (Patras-Athens-Thessaloniki-Evzoni) land transportation networks.



Thessaloniki port's key parameters & statistics

Technical parameters

Total port area	150 ha
Water depth	12 m
No. of quays	27
Total quay length	6.2 km

Statistics (2014-2013)

	2014	2013	Yoy 14/13	
TOTAL	14.41 mln tn	12.98 mln tn	+11%	
Dry bulk	4.34 mln tn	3.81 mln tn	+14%	
Liquids	5.84 mln tn	5.26 mln tn	+11%	
General cargo	4.23 mln tn	3.91 mln tn	+8.1%	
Incl.	Containers	349.513 TEU	322.310 TEU	+8%
	Ro-ro	48 thou. tn	44 thou. tn	+9%
Pax	24.96 thou.	33.24 thou.	-25%	
Ship calls	2,097	1,819	+15%	



More information, including terminals, stevedores, networks and investment possibilities at www.harboursreview.com

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