



# Newsletter

December 15<sup>th</sup> 2016

*Link road, rail, sea!*

Council Of Intermodal Shipping Consultants

**YEAR XXXIV  
Issue of December 15<sup>th</sup> 2016**

***ROAD TRANSPORT***

EUROPEAN ROAD FREIGHT 'ON THE THRESHOLD OF SYSTEMIC CHANGE' ..... Page 2

***INTERMODAL TRANSPORT***

NEW FREIGHT CENTRE OPENS IN AUSTRIA: VIENNA SOUTH FREIGHT TERMINAL ..... " 4

***TRASPORT & ENVIRONMENT***

CHALLENGES OF IMO'S 0.5% GLOBAL BUNKER SULFUR CAP ..... " 8

***LOGISTICS***

NEARLY 70% OF SHIPPERS LOOKING TO STANDARDISE SUPPLY CHAINS ..... " 18

***LAW & REGULATION***

TRANSPORT OPERATORS' LIABILITY IN RUSSIA 'CAN BE EXTENSIVE', WARNS TT CLUB ... " 21

***PROGRESS & TECHNOLOGY***

THE COMING OF AGE OF SMART CONTAINERS ..... " 24

***ON THE CALENDAR*** ..... " 30

***December 15<sup>th</sup> 2016***

The content of the C.I.S.Co. Newsletter is also published in the newspaper "Informare" accessible on the Internet site <http://www.informare.it>

## ROAD TRANSPORT

### EUROPEAN ROAD FREIGHT 'ON THE THRESHOLD OF SYSTEMIC CHANGE'

The European road freight industry is on the threshold of a period of systemic change that will transform its operating models and disrupt markets, according to a new report from Transport Intelligence (Ti).

The latest edition of its European Road Freight Transport 2016 report highlights several competing alternative fuels that are being developed “and although still not competitive against fossil fuels at the moment, they have the potential to transform the industry in the near future”.

It also highlights trends among vehicle manufacturers, which “are investing huge sums in battery technology and it seems inevitable that in the next five years it will become feasible for even the largest trucks to be powered by electricity”.

Other key observations include:

- The road freight sector is not one single market.



Rather, it is divided up into a number of different segments that may overlap, yet operate indistinctly different patterns and serve different customer types.

- The European road freight transport market is highly fragmented.

The top 10 players are estimated to have accounted for only 10% of the market in 2015.

- In 2015 the European road freight market is estimated to have grown by 2.5% in nominal terms, slightly lower than 2.8% growth in 2014.

- Market growth has been driven by volume growth in 2016, whereas the impact of changing transport prices is thought to have been smaller than the previous year, but slightly negative overall.
- Implementation of a minimum hourly wage for drivers in France and Germany is likely to affect the cost structure of road freight providers operating in these markets.

Ti Economist David Buckby commented: "Both 2015 and 2016 appear to be years where the European road freight market has once again grown in the low single digits.

The underlying demand environment appears to have been a little better in 2015 and 2016 than in 2014, though lower diesel prices have curtailed overall growth."

He said the main driver of change in road freight pricing was the cost of fuel.

Buckby continued: "It is perhaps surprising that cheaper fuel has not had more of a negative impact on market growth, though other costs continue to rise and in any case there is no guarantee that lower overall costs translate perfectly to lower rates, in the short run or otherwise."

As well as the recent impact of diesel prices, European Road Freight Transport 2016 examines alternative fuels and their potential to transform the industry.

Although governments around the world have invested heavily in the concept of alternative fuel strategies, using alternative fuels in engines designed for petrol-based fuel is not straightforward.

For example, if bioethanol makes up more than a certain percentage of the fuel by volume, its corrosive nature means that engine components must be replaced.

Several competing alternative fuels are being developed and although not competitive against fossil fuels at the moment, they have the potential to transform the industry in the near future.

Other technologies examined in the report include Transport Management Systems, autonomous vehicles and the potential impact of drones.

*(from: lloydsloadinglist.com, November 29<sup>th</sup> 2016)*

## INTERMODAL TRANSPORT

### **NEW FREIGHT CENTRE OPENS IN AUSTRIA: VIENNA SOUTH FREIGHT TERMINAL**

*Austrian Transport Ministry and ÖBB lay the groundwork to foster sustainability and modal shift of freight from road to rail in the longer term*

Over the last three years, the new Vienna South Freight Terminal has been taking shape on the southern fringe of Vienna.

Built by ÖBB-Infrastruktur on behalf of the Austrian Transport Ministry, the multifunctional hub will be very much 'grand central' for cargo traffic.

Its central location in Europe - at the confluence of three Core Network Corridors - makes the new multifunctional terminal a pivotal link for international import and export.

In building the terminal, the Transport Ministry and ÖBB have laid the groundwork for a long-term modal shift of freight from road to eco-friendly rail - in Europe and beyond.

This is an important step, since ÖBB is already one of the European Union's star performers: rail's share of the Austrian freight market represents over 30 per cent, and Austrian transport policy aims to increase this to circa 40 per cent in future.

In this context, ÖBB intends to play an even greater role than at present.

Yesterday (5 December), the new freight terminal was formally opened at a ceremony attended by a number of high-ranking personalities: Jörg Leichtfried, Federal Minister of Transport, Innovation and Technology; Andreas Matthä, Chairman of the Board of Management, ÖBB-Holding AG; Jozef Vasak, European Commission; Maria Vassilakou, Deputy Mayor of Vienna; Karl Wilfing, Member of the Lower Austrian State Parliament with responsibility for transport (deputising for State Premier Erwin Pröll); and Alois Schedl, Director of the Board of ASFINAG.

In opening the Vienna South Freight Terminal, the Transport Ministry and ÖBB are supporting Austria as an economic centre whilst creating a high-capacity terminal facility in the eastern part of the country.

One major benefit of consolidating everything on a single site will be to reduce the number of intra-urban train and shunting movements, as well as the number of intra-urban HGV journeys.

### *The Vienna South Freight Terminal project*

The Austrian Transport Ministry and ÖBB are together investing some 246 million euros in building the ultra-modern Vienna South cargo centre.

The transshipment facility covers an area of 55 hectares, the equivalent of around 77 football pitches.

The terminal is focused on combined transport.

Freight's new 'grand central' is located south of Vienna, and connects directly to the rail line between Vienna and Pottendorf and by road to the S1 motorway.

The cargo centre is a vital hub for connections to and from the North Sea, as well as the Black Sea and the major Adriatic Sea ports.

Vienna is thus in a pivotal location for goods going to and from southern and eastern Europe, and indeed beyond.



All this means optimised transit times, quicker transshipment, and fewer intra-urban HGV journeys.

### *Dry run prior to operation*

All terminal processes were tested over a two-month period in order to ensure smooth, problem-free

operation once the terminal officially opens for business.

To test terminal operations under real conditions, Rail Cargo Group ran one train per day into the terminal, on which all the processes were rehearsed: handling different types of load unit, operational interaction between processes and systems, and of course loading and unloading.

Procedures were thus checked and fine-tuned a few weeks ahead of the official opening.

### *Worksite organises open day for neighbours*

Going for a ramble on Austrian National Day (26 October) is a long-standing tradition.

This year, those living near the Vienna South terminal were given the opportunity to roam across the 55-hectare site and see the place for themselves.

Over 600 visitors from Hennersdorf, Vösendorf and Rothneusiedl (in Vienna's 10th district) took up the invitation – including many families with small children, who enjoyed a range of activities laid on for them at the cargo centre: a bouncy castle, tours of the gantry crane, toy trucks, and face painting.

### *Quotes*

Jörg Leichtfried, Austrian Transport Minister: "I want to move as much traffic off the roads and onto rail as possible.

To do that, we need world-class rail infrastructure.

The new freight terminal in Vienna will take up to 220,000 HGVS off the roads.

Experts estimate that the Inzersdorf freight terminal will help shift around 60,000 HGV journeys to rail in 2017, a figure which is set to rise to circa 220,000 once the terminal is fully up and running."

Andreas Matthä, ÖBB-Holding AG Chairman of the Board of Management: "Vienna South Freight Terminal is cargo's new "grand central".

Its central location in Europe - at the confluence of three Core Network Corridors - makes the new multifunctional terminal the international hub for import and export.

In future, it will be the locus of rail freight in Europe, not only consolidating Austria as a place to do business, but also creating a high-capacity terminal facility in the eastern part of the country."

Jozef Vasak, European Commission: "This project unblocks a bottleneck at the interface between three European Core Network Corridors and burnishes Austria's credentials as a leader in enhancing its rail network."

Maria Vassilakou, Deputy Mayor of Vienna: "The new cargo centre will be a huge boon to the city and the wider region: better conditions for rail freight and more room downtown for the housing we so urgently need.

The cargo centre is thus a vital building block in Vienna's mobility and climate strategy, and a sine qua non if the city is to build adequate new housing in its central districts."

Karl Wilfing, Member of the Lower Austrian State Parliament with responsibility for transport (deputising for State Premier Erwin Pröll): "The new freight terminal will place the local economy on a firm footing, with particular benefits accruing to the industrial and logistics firms based in and around southern Vienna.

At the same time, consolidating transport modes on a single site will free up other infrastructure for use by passenger transport."

Alois Schedl, Director of the Board of ASFINAG: "Better connectivity with rail is one of ASFINAG's primary aims.

The new junction in Inzersdorf will connect the freight terminal to the motorway and wider road network.

The project is a successful example of close coordination between ASFINAG and ÖBB in planning and building modern, multimodal infrastructure."

*(from: [railjournal.com/railcargo.at](http://railjournal.com/railcargo.at), Decembre 6<sup>th</sup> 2016)*



## TRANSPORT & ENVIRONMENT

### CHALLENGES OF IMO'S 0.5% GLOBAL BUNKER SULFUR CAP

*What has happened so far?*

As most people are aware, the IMO voted in its 70th session of the Marine Environment Protection Committee (last week of October 2016) to globally cap the maximum amount of sulfur allowed to 0.5%.

HFO will be further allowed (there is no mandate to disallow usage) provided it meets the set standards.

Alternative measurements like scrubbers are also accepted to reduce the ships emission.

The number of 0.5% had already been unanimously adopted in 2008 during a meeting of the MARPOL Annex VI review group, and was ratified by 53 countries (81.88% of tonnage).

The date of implementation depended on the outcome of a study which the IMO conducted and presented this August (study carried out by CE Delft).

The study aimed to determine if sufficient production and therefore availability of low sulfur fuel oil (LSFO) would be likely.

Date	Sulfur Limit in %	
	Global	SOx ECA
2000	4.5%	1.5%
2010		1%
2012	3.5%	0.1%
2015		
2020	0.5%	

A positive outcome would set the date at 2020, whereas a negative prospect would allow another five years before the new regulation became effective.

Bloomberg estimated that the global cap would add 250 million metric tons of LSFO to global demand.

The IMO study concluded that there are no bottlenecks of low sulfur fuel to expect, whereas another published study by EnSys (Energy & Systems Inc.) claimed the opposite.

It is worth noting that EnSys made an unsuccessful bid to carry out the official IMO study.

The EnSys study was supported by BIMCO and IPIESA, an oil and gas industry association.

However, the International Chamber of Shipping pointed out in its Annual Review 2016 out that the IMO might place itself under political pressure if it set the date at 2025: "In reality the decision taken by the IMO is likely to be a political one.

[...] Even if the supply of compliant fuel is projected to be tight, IMO Member States might nevertheless conclude that it is politically unacceptable to postpone implementation."

This may have its roots in the fact that the European Union has already agreed that the sulfur cap will be effective for all 200-mile deep EU Member coastlines by 2020.

The coastline reaches partly into the Indian and Pacific Ocean as some states have territories overseas.

Setting the date to 2025 would make the North African Coast corridors where 3.5% sulfur is still allowed, too close to many European States for the liking of the EU regulators.

### *Does the Sulfur Cap Make Sense?*

It might in fact be a case of too little too late.

Not only does the European Union take over action regarding environmental regulations and leaves the IMO behind in the political field, in addition the IMO regulations are too weak and the cap agreed on is too forgiving, from an environmental point of view.

The IMO wasted 10 years following Kyoto which tasked the organization with regulating greenhouse gas emissions.

This was stated by Bill Hemmings, Director of Aviation and Shipping of the NGO European Federation for Transport and Environment, which is counseling the UNO on environmental issues.

Shipping companies and ship managers may cringe because of the ever-rising costs of remaining compliant by using better fuels like marine diesel or expensive technologies like scrubber.

Conversely, NGOs and scientists cringe because even 0.5% of sulfur is still five hundred times higher than sulfur limits in diesel for cars, where its capped at 0.001%.

It has long been known that vessels pollute the environment much more than all cars combined, and that they cause tens of thousands of premature deaths alone in Europe.

So, does it makes sense to further reduce sulfur?

Yes it does, but many companies will be affected negatively.

However, there are other points to consider when judging the environmental impact.

The high sulfur exhaust of vessels helps to counter the CO<sub>2</sub> greenhouse effect.

This is because the sulfur dioxide reduces the amount of solar energy reaching the surface, hence it cools down the planet.

This man-made influence is dwarfed by natural sulfur oxide exhaust of algae, which produce a compound called DMSP (dimethylsulfoniopropionate).

This compound is released slowly over time from algae close to the surface and act as a sun screen.

When other phytoplankton start eating the algae DMSP is released in big quantities into the water from the digested algae.

Bacteria in the water start processing the chemical, creating *dimethylsulfide* (DMS), a gas which leads to the formation of clouds (cloud condensation nuclei).

Close to the coastline we recognize this as the so typical "ocean smell".

Clouds are most important for maintaining the climate as they reflect solar energy back into space, just as SO<sub>x</sub> (sulfur oxide) does.

This process is threatened by an effect called ocean acidification.

The ocean basically acts as a CO<sub>2</sub> sink by binding CO<sub>2</sub> from the atmosphere.

This makes the ocean more and more sour, because the carbon dioxide reacts with water and forms H<sub>2</sub>CO<sub>3</sub> (carbonic acid).

Ocean acidification is a major cause of dying coral reefs and the destruction of phytoplankton, which we need to produce DMS for cloud building.

Since the beginning of the industrial revolution the so-called ocean acidification has stored roughly a third of all man-made emissions.

It might look far-fetched, but refining an additional 250 million metric tonnes of fuel has a very negative impact on CO<sub>2</sub> emissions.

Firstly, the additional production steps demand additional energy and it is likely that this will be covered by burning non-renewable resources; secondly the refining itself sets free CO<sub>2</sub> emissions.

Therefore, capping sulfur will accelerate global warming to some degree.

### *Cost and Challenges of Sulfur Reduction*

Vessel owners basically can decide between different strategies to meet the requirements, all have advantages and disadvantages.

- They can install scrubber systems
- They can buy more expensive low sulfur fuel oils like MGO/MDO or new ECA fuels, e.g. Exxon's HDM50.

In total, there are more than 20 new blends

- They can refit the vessel to LNG

Despite investment and operational costs there are additional less obvious expenses.

One is the loss of cargo room when fitting a scrubber into the vessel.

The German ferry company TT Lines carried out a pilot project, fitting four scrubbers as hybrid systems (open and closed loop) into its ferry ROBIN HOOD (6300 tdw, 180 m length).

Last year, at the ISF Conference at the University of Flensburg in Germany, the company presented the results of the project.

The ROBIN HOOD scrubbers were fitted into its port and starboard funnels, whereas the two container sized engine compartments had to be fitted below deck, blocking approximately one sixth of its deck cargo space.

In total 17,500 meters of electric cable, 700 meters of GRE pipes and 2,000 pieces of components had to be installed.

New equipment comes with new administrative effort and additional maintenance jobs.

Few ranks are familiar with the new systems, leading to higher costs in the beginning.

Due to the new maintenance jobs time is taken out of the tight schedule.



Vessels which are switching permanently from HFO to low sulfur fuels instead of using scrubbers, may run into similar problems as today when entering SECAs.

Dr. Reinhard Krapp of the VDR (an industry association of German shipping companies) published in 2014 a paper named "Industry Guidance on

Compliance with the Sulphur ECA Requirements" and pointed out a number of problems when switching fuels.

One of the main aspects are operational problems using engines optimized for HFO on MGO/MDO when running for longer durations.

It is assumed that this is due to a lower injection temperature (approx. 100° C lower), which causes stress on the surrounding materials and seals.

Another factor might be that MGO/MDO have higher homogeneity leading to a faster rise in pressure when combusted.

This might change the vibrations and force transmission says Dr. Krapp.

As a result, fuel could leak into lubricants.

He also pointed out that the energy density of current HFO is approximately 8% higher than that of distillates.

In return, distillates have a 2% higher net calorific value, with a net loss of approximately 6%.

There are many more concerns when using low sulfur fuels for HFO-designed machinery.

Most of them are well understood as the subject has been researched well since the introduction of SECA regulations:

- Lower acidity: Part of the sulfur is converted into sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) during the combustion process.

Using common cylinder oil with a high alkali base number will lead to wear, as the amount of sulfuric acid is now lower

- The use of ultra-low sulfur fuels requires special consideration.

Their properties vary depending on the supplier and there may be incompatibilities when mixed with HFO, MDO or other ULSFs

- The much lower viscosity and reduced lubrication can cause abnormal wear.

### *Monitoring the Cap*

Enforcing the sulfur cap in international waters might be challenging.

The questions are, who is monitoring it and who pays for it?

If the regulation is to be taken seriously then enforcement and control must occur, otherwise there will be no incentive to carry out the regulation.

The most likely solution will be the introduction of some technological recording and measurement of emissions.

At least the surveillance close to the outside borders of SECA zones will be less troublesome, because technological measurements inside the zones already exist for the purpose of supervising them.

Authorities cooperate within the areas, e.g. the joint surveillance Bonn Agreement (North Sea) to detect oil spillages and harmful chemicals, and similar agreements between HELCOM members (Baltic Sea) are in place.

A number of tools like airborne surveillance are used to determine vessel emission (NO<sub>x</sub>, CO<sub>2</sub>, SO<sub>2</sub>) and could be applied further outside of current zones.

These airplanes use antennas to "sniff" emissions from nearby vessels giving hints to Port State Control officers about which vessel to enter.

The advantage over optical systems like differential optical absorption spectroscopy (DOAS) is that the system can be deployed at night or on cloudy days.

The PSCs of Paris MoU and Tokyo MoU have already been announced this November to increase their focus on sulfur limit regulation and to plan a major campaign for 2018.

The concentrate campaign indicates that embarked officers will thoroughly examine the vessel to determine whether it has remained compliant.

However, realistic long-term surveillance options for international waters have not been revealed yet.

So far PSC has no power outside its own waters and could only inform the flag state about sulfur limit exceedance.

The idea to obtain emission data by multiplying fuel emission factors by vessel journey data is interesting.

This is much more an organizational than technological challenge.

Bunker agents would need to deliver precise data about the ship they have sold and the type of bunker, requiring in turn an additional monitoring system.

Vessel journey could be calculated by combining available positioning data, e.g. from HELCOMs Automatic Identification Systems (AIS), with other available data sources like Lloyd's Fairplay database of vessel machinery, and operational data from the ship.

Monitoring and storing the data of wash water discharge and emission exhaust from scrubbers within the voyage data recorder, would allow a meaningful combination with GPS data, thus, creating a system which could be used to determine when, where and how much SO<sub>2</sub> a vessel emits.

The only possible way to make absolutely certain that vessels are not switching back to HFO would be to disallow bunkering of HFO if a vessel does not possess a cleaning system.

However, until a functioning control system is up and running many will try to exploit loopholes.

As often reported the MARPOL Annex VI states that the vessel "shall not be required to deviate from its intended voyage or to delay unduly the voyage in order to achieve compliance" (Regulation 18, 2.2).

Thus, the concerns are that vessels will bunker on purpose in these harbors where only HFO is available.

Less widely reported is the fact that this phrase applies only if the ship can present a record of actions taken to achieve compliance and evidence provided "...that it attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources" (Regulation 18, 2.1.1 and 2.1.2).

Furthermore, the vessel needs to notify the competent authority that a compliant bunker was not available (pro-active).

These measurements minimize possible abuse of the exemption.

### *Production Challenges*

Despite monitoring the cap, the distribution of suitable fuels is the main challenge.

It appears that many ports will not be able to deliver LSFO in satisfactory amounts by 2020.

The International Bunker Industry Association (IBIA) warned that many ports and countries will not be able to replace the current supply level of HFO with LSFO in time.

These ports would then need to import bunker fuel from distant refineries.

In return this would lead to a higher non-competitive bunker price and additional environmental pollution, due to transport, creating winners and losers on the bunker market, where the winners are those who are able to satisfy demand for a good price.

Especially jeopardized are those ports which rely exclusively on local refineries.

If there were to be regional imbalances the bunker market might shift towards the regions that can provide compliant fuels.

But why are the refiners unable to satisfy demand despite the fact that four years remain, and considering that the sulfur limit level has been known since 2008?

We do not know why they are moving so late.

IBIA for example pointed out that before the due date few vessels will be using the more expensive refined fuels.

Most vessels will only switch when necessary.

This is dangerous as it could lead to a situation where the "world fleet" tries to switch overnight; such a spike in demand could not be handled.

Similarly, refiners will try to add capacity as late as possible.

Today refiners are especially concerned about who will buy high sulfur fuel after 2020 and how to expand the production of LSFO.



Demands could be met by blending bunkers with distillates to create HFO with  $S \leq 0.5\%$  or by processing away sulfur (hydroconversion / hydrodesulfurization).

The last option requires additional production steps and (if not in place) additional equipment.

To blend bunker, low sulfur distillates are mixed with high sulfur residuals to create the required sulfur content.

The used distillates are lost for the market.

Both options will have residual "left-overs" from production.

In addition, the maritime industry will start to compete with other shore-based industries by acquiring higher distilled fuels.



Refiners will then sell to the market offering the greatest returns.

*How big is the shift?*

The IMO study sets the high sulfur fuel oils demand of 2012 as its base for its calculation, it was 228 million metric tonnes.

In 2020 this could sink to 36 million tonnes (p. 13).

Refiners would sell ~85% less high sulfur fuels to the maritime industry than they did in 2012.

The IMO concludes that these oils will be a niche product, only used by ship operators who decide to install scrubbers.

By 2020 more than 3,800 ships are expected to use such cleaning technology (p. 151).

This is basically a swap, because vessels will continue to use fuels.

The demand for total marine heavy fuel oils containing less than 0.5% sulfur is expected to rise to 233 mt.

Adding the anticipated 36 mt of high sulfur oils shows that the bunker market is expected to be bigger in 2020 than it was in 2012. (p. 13)

### *How big is the market impact?*

Since the end of the 80s the global demand for residuals (all industries) has been sinking continuously, despite maritime demands for HFO rising continuously.

In 1990 almost 13.3 million barrels per day (BPD) of residuals were produced.

In 2012 production and demand were both four million BPD lower.

On average, the maritime industry requires roughly 35% of the global residual fuel production for HFO, the other 65% is consumed by shore-based industries such as power plants.

Considering the number of vessels which are expected to continue burning HFO, the total global demand for residual fuels will be "only" ~30% lower than it was in 2012.

A part of the 30% overhead could be used within new-build coking units.

This would ease the demand for distillates to blend bunker, although it seems unlikely that there will be a sufficient number of new coking units by 2020 (Data by John M. Mayes and John Auers of Turner, Mason & Company and IndexMundi.com).

Dealing with an HFO surplus and avoiding market disruptions for non-maritime HFO demands is the real challenge, not producing enough  $S \leq 0.5$  fuels.

This matters because it shows that maritime bunker is only a share of the refiner's residual fuel oil customer portfolio.

*(from: hellenicshippingnews.com, December 7<sup>th</sup> 2016)*

## LOGISTICS

### NEARLY 70% OF SHIPPERS LOOKING TO STANDARDISE SUPPLY CHAINS

Nearly 70% of shippers are actively looking to standardise and streamline their supply chains and one third of companies are operating more than 10 supply chains, causing inefficiency and high costs, according to a new study commissioned by the world's largest third-party contract logistics provider.

The white paper commissioned by DHL Supply Chain reveals that many businesses face supply chain overlaps and inefficiencies, with 42% of businesses wanting to reduce their number of supply chains to reduce complexity and streamline operations.

And nearly 70% of survey respondents said they were now actively looking into standardisation solutions to reduce cost, inject agility, and streamline operations.

DHL Supply Chain said the trend resulting in businesses operating multiple supply chains was a result of years of prolonged growth, merger and acquisition (M&A) activity and globalization that have transformed business operations but "left supply chains in a complex, underdeveloped web".

THE PLUG-AND-PLAY SUPPLY CHAIN:  
BEYOND EFFICIENCY TO GROWTH



The white paper – The Plug-and-Play supply chain: Beyond efficiency to growth – by the Iharrington group was commissioned by DHL to identify a path forward for businesses that want to streamline supply chain operations and deliver growth.

It argues that the solution lies in a 'Plug and Play' approach that standardizes 70-80% of supply chain operations at the core of a business.

The balance then consists of tailored solutions to meet a segment's specific market needs.

The white paper details how, "unlike the segmentation of the past, next-generation segmentation is informed by data-driven analysis of customer and

product profitability, market and geography requirements, and service parameters.

These collectively enable smart segmentation, resulting in a standardised, yet custom, solution.”

This delivers cost-efficiencies and a tailored customer service, which helps drive growth and profitability, the report argues.

Lisa Harrington, president of Iharrington group, said, “This white paper documents how years of neglect have created exceedingly complex and far-flung supply chains, which is costly for businesses and is standing in the way of greater profitability.

With a third of businesses operating more than 10 supply chains, it’s no wonder that nearly 70% of our survey respondents said they were now actively looking into standardization solutions to reduce cost, inject agility and streamline operations.

However, only 16% of businesses believe their standardization efforts are well under way or complete.

This suggests a lack of strategic direction as to what the end result should look like.”

In achieving the Plug and Play supply chain, the white paper documents the leading role played by third-party logistics providers who are on the front line of the move towards supply chain standardization.

Gary Keatings, vice president of solutions design at DHL Supply Chain, commented: “There is clearly a fundamental shift taking place, with the majority of companies looking seriously at supply chain standardization as a way to achieve growth and drive profitability.

As strategic partners to businesses that have embarked on this journey, we have developed a considerable knowledge base on best practice in this area that is reducing the costs of future implementations and making them faster to achieve.

Our database and library of best practice means profiles of new supply chains can be matched in percentage terms against existing, operational Plug and Play supply chains.

This means if a new customer has a 70% match in terms of the qualities of a best practice example, we can work with them to develop the solutions that will complete the remaining 30%.

This approach has reduced start-up implementation lead time and cost by up to 70%.”

You can download the ‘Plug and Play’ white paper via:  
[www.dhl.com/plugandplay-growth](http://www.dhl.com/plugandplay-growth).

*(from: lloydsloadinglist.com, November 30<sup>th</sup> 2016)*

## LAW & REGULATION

### **TRANSPORT OPERATORS' LIABILITY IN RUSSIA 'CAN BE EXTENSIVE', WARNS TT CLUB**

Freight forwarders and logistics operators offering services in Russia should consider their liabilities beyond just cargo protection, warns freight and logistics insurer TT Club.

The London-based specialist insurer said it was reminding transport operators with interests in the Russian market of "a five-fold liability risk profile associated with doing business in the region".

TT Club's representative partner in Russia, Panditrans underlined these risks in a presentation last week at the TransBaltic industry conference in St Petersburg.

Speaking at the conference, Panditrans Deputy Director Alexander Petrenko, highlighted that in addition to claims for loss or damage to cargo, operators could be liable for financial losses through errors and omissions, as well as third-party liabilities, and fines and duties imposed by state authorities.

Furthermore, there is a range of costs arising from the consequences of any incident involving a container or CTU (cargo transport unit), he said.

Aside from this, liability to a contractual party, usually limited by applicable international and local laws and conventions, may be significantly increased depending on the circumstances of the incident, such as whether gross negligence or reckless conduct on the part of an employee or hired subcontractor.

"The level of risk for some types of incident, such as cargo theft and armed hijacking, may be higher in the region, but a lack of knowledge and experience of regulations, the law and judicial procedures are also likely to expose operators to considerable unexpected costs", explained Paul Knighton, a senior underwriter with TT Club.

"Operators should never consider cargo cover alone as sufficient.

All carriers, truckers and forwarders need to carry out a thorough assessment of common liabilities, both local and international, when providing transport services to Russia and the FSU".

The TT Club's warning comes as some signs of a recovery in container trade volumes to the region are being reported.

As a consequence of well-documented economic and political difficulties, Russian container movements experienced an estimated 25% decline in 2015.

However, a more recent recovery in the Russian economy has fuelled increases in container transport during the first half of this year, TT Club said.

The Russian Association of Road Carriers reports a 6% year-on-year rise over the six-month period, representing two billion tonnes of freight.

And container traffic on rail has gone up by 5.6% to 1.5 million TEU in the same period, it added.



While rates of growth similar to those recorded prior to the global economic downturn are unlikely, the increase in trade will encourage operators, who must once more apprise themselves of the specific liabilities involved in transporting goods in the region, TT Club said.

"Our 25-year experience in the FSU has led us to conclude that in practical terms the transport operator is liable for almost everything in the event of an incident," warned Petrenko.

"In order to assist the operator in understanding the complexity of the situation, we have analysed our claims history and identified four main factors which commonly impact on risk exposure".

These four elements are:

- The Human factor – from genuine mistakes, errors and omissions to fraud by own employees or sub-contractors;
- The Professional Factor – poor internal procedures and lack of basic risk management policies;
- The Juridical Factor – imperfection of applicable international and local legislation and disputable court practices;
- The Insurance Factor – low level of insurance 'culture' and a shortage of insurance products specifically designed for the needs of transport operators.

“TT Club and Panditrans strongly advise transport and logistics service providers operating in Russia and the FSU to carry out thorough risk management reviews to identify their possible liability exposure and to seek insurance cover that will give them assurance that the cost of such liabilities can be adequately met,” TT Club said.

*(from: lloydsloadinglist.com, December 5<sup>th</sup> 2016)*



## PROGRESS & TECHNOLOGY

### THE COMING OF AGE OF SMART CONTAINERS

*Massive deployment of intelligent, connected containers is just around the corner. Here is why. By Tim Baker - Director of Marketing and Communications, TRAXENS.*

Smart containers, or containers equipped with electronics allowing them to be remotely tracked and monitored, are not a new idea.

Even if the first smart containers were implemented over 15 years ago it is estimated then less than 4% of the more than 20 million multimodal containers are "smart" in 2016.

This means information allowing shipping lines to know where their containers are, and allowing shippers to know the position and condition of their cargo has so be entered manually somewhere along the line, with inevitable levels of error, omission and even fraud.

Although much of the logistics for handling containers is managed by information systems the fact that a container is incapable of communicate its own status means there are many information black holes, uncertainties, and discrepancies between what information systems indicate and reality.

The impact on efficiency for all actors in the container ecosystem has reached a level where change has become necessary.

But is change possible? And if so, why has it not happened before?

There are four main trends that combine to bring us to the tipping point for the age of smart containers:

- new driving forces in the shipping industry;
- high levels of digitalization of supply chains;
- increased awareness of the capability of connected objects;
- new technology which drives down cost.

The driving force for efficiency for the last 15 years has been bigger ships and this drive has been hugely successful enabling international trade by driving down the per TEU cost.

As the same tactic resulted in the same cost benefits for so many years, the idea that there was a limit or that there were other ways of gaining in efficiency have been underestimated.

However in the last 18 months, voices saying that the limit has been reached have been getting louder.

It is widely admitted that we are at the end of the era of "Bigger is Better" and that new sources of efficiency must be found.

The Smart Container is a great candidate.

### *High levels of digitalization of supply chains*

The power of digitalization in supply chains at a unit or palette level has transformed supply chains in manufacturing and retail.

The use of RFID tags and barcodes to identify individual items or pallets has allowed information systems to manage larger volumes of products in increasingly complex supply chains automatically, therefore cheaply and reliably.



boxes themselves.

The management of millions of boxes has been made possible because the data was real, because it was generated from the

However the RFID tag and the barcode have not been as easy to apply to the container because of its very different environment.

The ISO standard 10891 which defined a standard way to identify containers using RFID tags was finalized in 2009 yet even though it was technically feasible and clearly defined it failed to be adopted at any large scale.

Although the RFID tags themselves were low cost and reliable, the equipment needed to read them was expensive and only identified the presence of a container at one particular location.

In addition no workable business model emerged allowing a return on investment of this expensive equipment.

There was no channel allowing a part of the benefits for the container users to flow back to those who had to invest, no win-win situation.

So many large industries can now track and trace items throughout their supply chain, within stores, warehouses and distribution centres, but when their products are placed in a container they have very limited visibility.

The expectations of manufacturers and retailers to have end-to-end visibility for their products in transit has created a need for the smart container.

*Increased awareness of the power of connected objects*

Starting in 2007, the massive deployment of smartphones has demonstrated to many market segments the huge gains possible from automatically generated real data.

To “Uberize” has become a common verb for the effect of changing an industry through the novel use of data.

Investors have been looking for the next “Uberization” opportunity and the transport industry is seen as a good target.

Just in 2015 well over \$100M of venture capital was poured into companies like Flexport, Cargomatic, Freightos, Convoy, Transfix and others in the hope that one of them will transform the trucking or multimodal transport industry.

But all these solutions are pure software solutions.

Creating the Uber of multimodal container transportation is more complex in that the real data about the container’s position and condition does not exist.

Before being able to manage the data it must be created, but if a viable solution for generating and managing the data from containers can be built, the awareness of the potential will mean that the investment dollars will be available to make it happen.

*New technology to make Smart Containers viable*

Uber built their success on using data generated by the smartphones which were already carried by passengers and drivers alike, the challenge of managing the container logistics with real data starts by equipping containers with electronics.

Containers are not telephones and the technology needed to make them smart has to address very different issues especially in regards to power consumption and data transmission.

If massive deployment smart containers is going to happen then all sorts of containers must be addressed.

Reefer containers are have the particularity of being powered or having their own source of power generation but any universal smart container technology must be viable for dry containers, tank containers and other non-powered assets.

Existing data transmission technologies such as Bluetooth, Wi-Fi or GSM are not suitable by themselves for Smart Containers because they use too much energy and also because they would work very poorly when the container is in situations with high levels of humidity or surrounded by a lot of metal, which is precisely the environment of a container for much of its time.

New technology need to be developed.

### *New data management*

New business model by understanding the needs and expectations for door-to-door real data from containers and analysing the barriers that have prevented solution being deployed before, we have a chance of creating a Smart Container solution that can be deployed on a massive scale.



At TRAXENS this line of thought has led to develop a fundamentally new technology: TRAX-NET, a new way to manage and distribute data: TRAX-HUB, and a business model which ensures a win-win situation for the major players in the container ecosystem.

The main challenge for a complete Smart Container system is energy autonomy.

Any system which extends battery life of Smart Container devices contributes significantly to reducing the total cost of the whole system over time.

This has led TRAXENS to develop a communication technology specifically designed to work efficiently in the container environment: TRAX-NET.

TRAX-NET is a mesh radio protocol allowing containers to communicate with each other and with fixed infrastructure on ships and in yards using a minimal amount of energy.

The radio frequencies and redundancy protocols ensure good performance in the harshest container environment, enables signals from containers stored in the deepest hold of the biggest ships to reach the outside world, and to respect local radio emission regulations anywhere in the world.

TRAX-NET also allows all containers in the vicinity to share power hungry GSM or satellite communications.

The TRAXBOX devices which transform dumb containers in to Smart Containers, are also equipped with GSM or satellite communication capability which can be used when no alternative is available.

In addition on-board logic ensures that precious power resource is only used



for communication when there is something useful to be communicated resulting in the most power efficient and therefore cost effective solution.

Collecting information on the position, temperature, vibration and shocks and other parameters from an extendable family of dedicated sensors is vital but only one part of a viable Smart Container

solution.

The data produced has to have enough value to be able to support the necessary capital investment and in the complex value chain in the container ecosystem there must be a win-win situation.

Nobody doubts that having reliable near-real time data has value when you look at the big picture, but if some vital link in the ecosystem loses out, then deployment would be compromised.

At TRAXENS we have our own specific proposition for these two challenges.

TRAX-HUB A Big Data platform which allows useful data to reach people whether their information system is a mobile phone, a web browser, or a large data centre, and a business model centered on the Shipping Lines, the owners and operators of the future Smart Containers.

This approach led to CMA CGM investing in TRAXENS in 2015 and ordering a large number of their containers to be transformed into Smart Containers, and we have high hope that other Shipping Lines will follow suit.

*The coming of age of the Smart Container*

The idea of Smart Container 15 years ago was driven by the need for security after the tragic events of September 2001.

However that drive gave rise to solutions that were neither cost effective nor scalable.

Now business needs are driving a totally new generation of Smart Containers.

We are at the start of a movement that will take several years to fully deploy but it will not be long before the term "Smart Container" will no longer be used as the default version of a container will be connected, and the term "Dumb Container" will be reserved for the few that are not.

For more information please see [www.traxens.com](http://www.traxens.com) and [www.vimeo.com/channels/traxens](http://www.vimeo.com/channels/traxens).

Tim Baker can be reached at [t.baker@traxens.com](mailto:t.baker@traxens.com).

*(from: bic-containers n° 1 – 2016)*

## ON THE CALENDAR

- 24/01/2017 – 25/01/2017      Tehran      14th Trans Middle East 2017
- 23/02/2017 – 24/02/2017      Manila      9th Philippine Ports and Shipping 2017
- 22/03/2017 – 23/03/2017      Antananarivo 11th Indian Ocean Ports and Shipping 2017
- 19/04/2017 – 20/04/2017      Cape Town      17th Intermodal Africa 2017
- 18/05/2017 – 19/0520/17      Georgia      6th Black Sea Ports & Shipping 2017
- 06/0720/17 – 07/07/2017      Yangon      15th ASEAN Ports and Shipping 2017
- 28/09/2017 – 29/09/2017      Tallinn      Baltic Sea Ports & Shipping 2017
- 26/10/2017 – 27/10/2017      Barcelona      5th MED Ports 2017
- 29/11/2017 – 30/11/2017      Abidjan      18th Intermodal Africa 2017

The Secretariat of C.I.S.Co. is able to communicate detailed information on the programs of all the events and how to participate.