



Visual review, continuous port extension, facts, figures, statistics, actual developments and 50 YEARS

modes















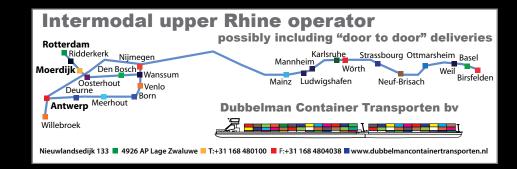


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The Kramer Group is ready for the next 50 years of containers.

### **Editorial**

# 50 years of containers in the Hamburg – Le Havre range

eople might think only Rotterdam and Bremen have a 50 year track record with containers, as the first vessel came across the Atlantic calling in at these ports. Might... because also in this history the truth is often overshadowed by the myths many people tell...



One of the best known myths is about the first container ship that called into Rotterdam and Bremen: the Sea-Land vessel "Fairland". The visit to

Rotterdam and Bremen is well documented, photographed and stored in a lot of archives, but it was not the first container vessel! The

"American Racer" was the first vessel, but she has not really been noticed, perhaps she was too fast for the journalists and photographers.....



Another area where the facts are unclear is the port figures in the early days of containerization. The first call of a container vessel has been archived for 1966. After this initial call the number grew steadily, but it took several years before the port container handling figures found their way into the port statistics. How to register this: Weight? Full and empty? Containers or TEU? What is a TEU?

From 1973 onwards all ports in the Hamburg – Le Havre range reported their container performances in TEU (1 TEU = 1 twenty foot equivalent unit).

The period before (1966-1973) you may call "the dark age" in container history. The earliest statistical figures, certainly against every expectation, you can find from the French port (Le Havre), which listed a performance of 20,960 TEU in 1968 and since that time they have reported their yearly figures.



The French have a greater affinity with figures and administration than one would think. In the port of Strasbourg a manager once showed me a hand written container statistic listing — I'm not 100% sure but I think it might have been 1968 where the figure "1" was noted representing the first TEU (EVP in French) handled in the inland port of Strasbourg, which has been blessed by at that time already having a heavy lift crane. Fantastic!

Rotterdam started its regular registration and publication a few years later, and from 1970 onwards they published the port's container performance. During the first container decades, however, Rotterdam was the only port with rounded figures (thousands), but since 1989 they have reported exact figures, like all other ports.

The official starting year for the container port activities in the Hamburg – Le Havre range is – as we have seen- 1966, but several years earlier (1963 according to the picture) nearly at the same place where the Port of Rotterdam office tower is located, a HAL general cargo vessel (Holland America Line) was being loaded with

brand new HAL containers (obviously not built in China!) standing on rail cars aside the ship. The rights on such old photograhs is a science in itself and time was too short, so we can't show this lovely premature container operation. Perhaps someone has the time and the curiosity to excavate the early years and figures to get it finally completely documented.

Another interesting thing is that statistic listings have a kind of evolution. For example when you gather information from a particular port in 1990 about the years before, your result will be a list with years and figures. When you repeat this in 2010 and you check the earlier years you may see that you find other, mostly higher, figures than you had in your earlier listing.

How can this be?

Registration has obviously been a learning curve and/or a changing perspective – which figures must be included, which not.

In this edition we present you with several figures —past and future developments- but of course also a visual gala of some historic and future aspects of containerization. We have found a unique series of aerial photographs covering the whole period and showing step by step the developments from a shared handling location somewhere in the corner of the port to a visually area-dominating business sector in the port: Bremerhaven!

In the terminal interface –sea or inland- there are a lot of innovating elements, from devices to complete concepts which are doubling the handling speed. It seems crazy that this is possible after a 50 year track record.

This is being achieved through reducing the constructural weights on the quay and so making the building of container terminals simpler –sea and inland- plus there is still a huge speeding up of the handling operation and thus the handling and throughput capacity of a terminal.

The original container as transport case has found it's way to different levels of our society and in this edition we also show you some nice and completely different applications.

For the year which is coming to an end we thank all partners for the perfect cooperation we always receive and for the coming year we wish you all a Happy New Year!

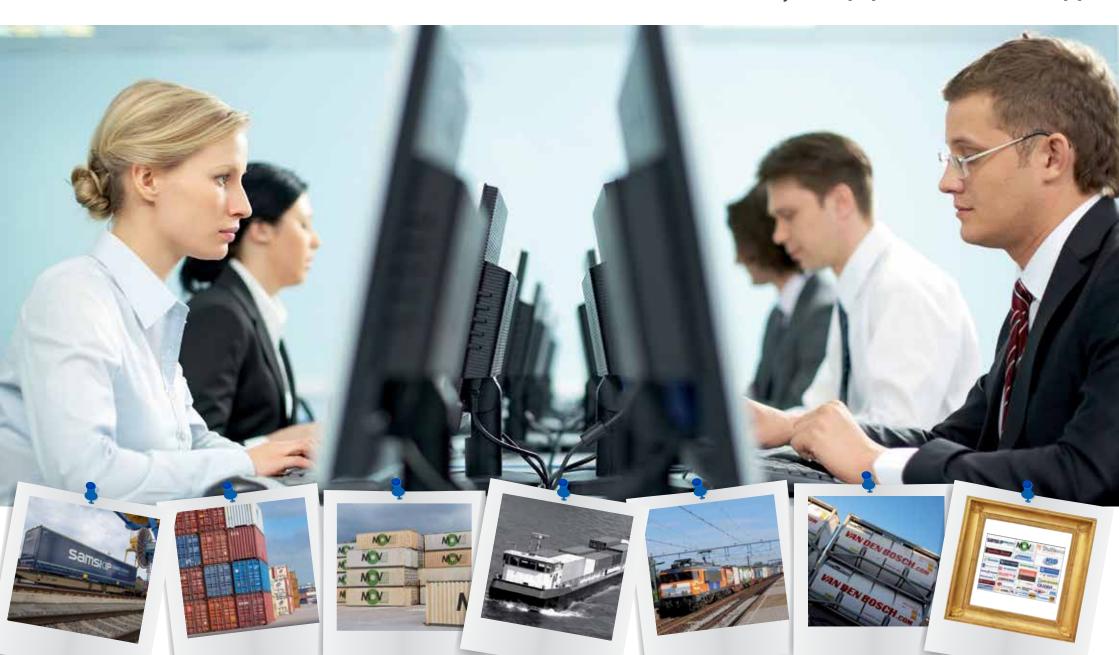


# Standard software for intermodal transport & logistics

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Hero Lang has made a aerial compilation of his photographic registrations from the expanding container activities in Bremerhaven; the small quiet village far away from the port acitivites, had finally been passed by them and the river got another riverbed

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Containerizing and intermodalizing of cargo flows works, watching the growing variety of continental units on different (kinds of) inland terminals

# 274 Rail operations with an equally long track record

The intermodal "sistema Ambrogio" proves the engagement of the company Ambrogio from the early beginnings, like TFG Transfracht, which already in 1969 transported their first containers via rail. Switzerland choose in 1980 for the modal shift from road to rail; a choice with sudden new hindrances

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In all six ports barging plays a role in intermodal streamlining; both sea and inland barge operations remain a challenge

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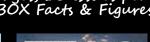








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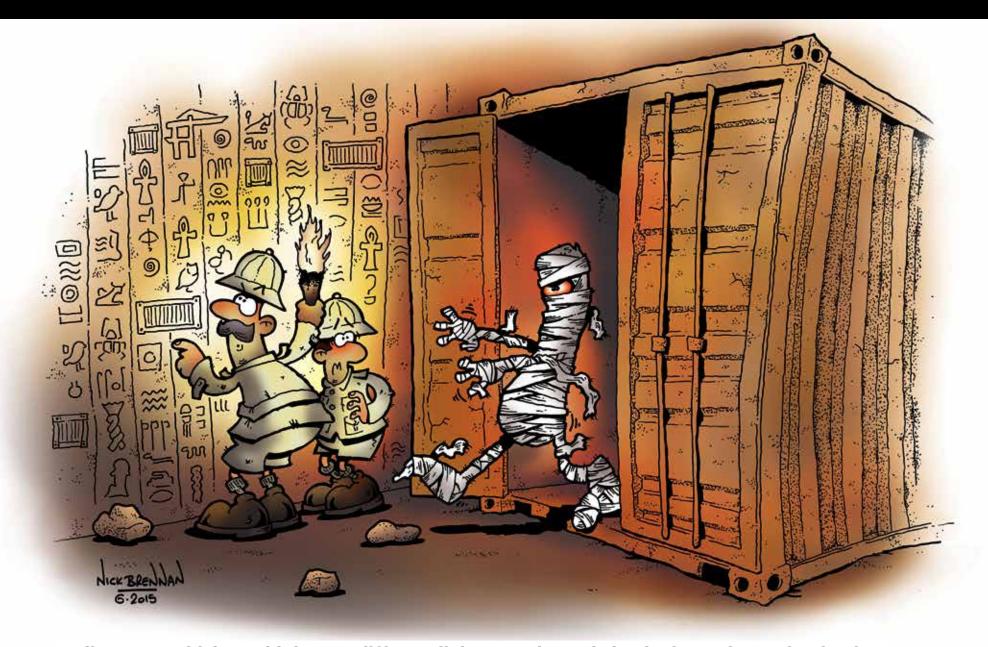








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A discovery, which would throw a different light on the early beginnings of containerization



Three photographs © bremenports GmbH & Co. KG



# European beginnings 10 years after the start

The "Fairland" twice spotted in Bremen (where the container handling in Bremen started, but for a short time only; it moved quickly from the city of Bremen to the closer to the sea located port of Bremerhaven). The "Fairland" —with two extendable- cranes on board, looks like a full container vessel but economically the first trips across the Atlantic will not have contributed to EBITDA of the pioneering deep sea lines.

As much cargo was still shipped as break bulk the scene in the picture below –also Bremencould be watched in all the ports inside and

outside the Hamburg – Le Havre range. Container cargo combined with breakbulk –some deep sea carriers did it with bulk as well- was the normal port scene, as the number of full container vessels operating deep sea carriers was growing steadily but slowly.

The brilliant idea of standardization gave containerization wings. The "stackablity" of containers (putting containers on each other) was a second important asset –the European rail units did not have this capability and a lot of them still don't have it- for the boost during the last 50 years.

While Malcom McLean in the USA put the emphasis of his development on the sea and road (Sea-Land), in Europe Ambrogio Gallerate and KÖGEL Burtenbach focused on the combination rail and road. Their solutions were different:







Four photographs © www.ambrogio.it



Ambrogio Sr. chose vertical handling and needed craned terminals (Sistema Ambrogio); the system was composed out of three components: the boogie (wheels), the support frame and the loading unit.

KÖGEL decided on horizontal handling by constructing a chassis with steel gliding tracks which were identical to those on the rail cars. By positioning the truck close to the rail car and opposite to the gliding, the loading unit could be loosened and moved from the truck onto the rail car.

Both systems have survived. The vertical handling is the most frequent system certainly because it is more or less applicable for all mo-

des in the same configuration. The evolution of the horizontal handling system generated a turnable sledge variation: the loading unit is moved on a sledge, which is turned to a certain angle and a part of the sledge is outside the rail car to bridge the space between truck and rail car. After loading or unloading the sledge is turned back to rail car and secured.

The horizontal handling is mainly a handle yourself solution for small terminals or factories with a rail siding. Terminal investments are not necessary –just a track and some space aside. The truck must be equipped with the proper chassis and the loading units, and you need specific rail cars with the gliding system, with or without the turning option.



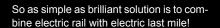


Two photographs © www.koegel.com





orizontal handling solutions are ideal for factories close to or with its own railsiding, but also for urban locations, where space is rare and volumes are limited (because the whole suppliant volume can not be carried by road through the whole city: Berlin, Paris, London), but where you can quarter the city area and supply the quarter from a small horizontal handled terminal.



Three photographs © www.railcare.ch









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- BOX®

Arie Jonkman





Rotterdam © Jonkmanfotografie.nl





Rotterdam Amazonehaven



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St. Goarshausen (Rhine) salvage of the "Waldhof"

© Jonkmanfotografie.nl



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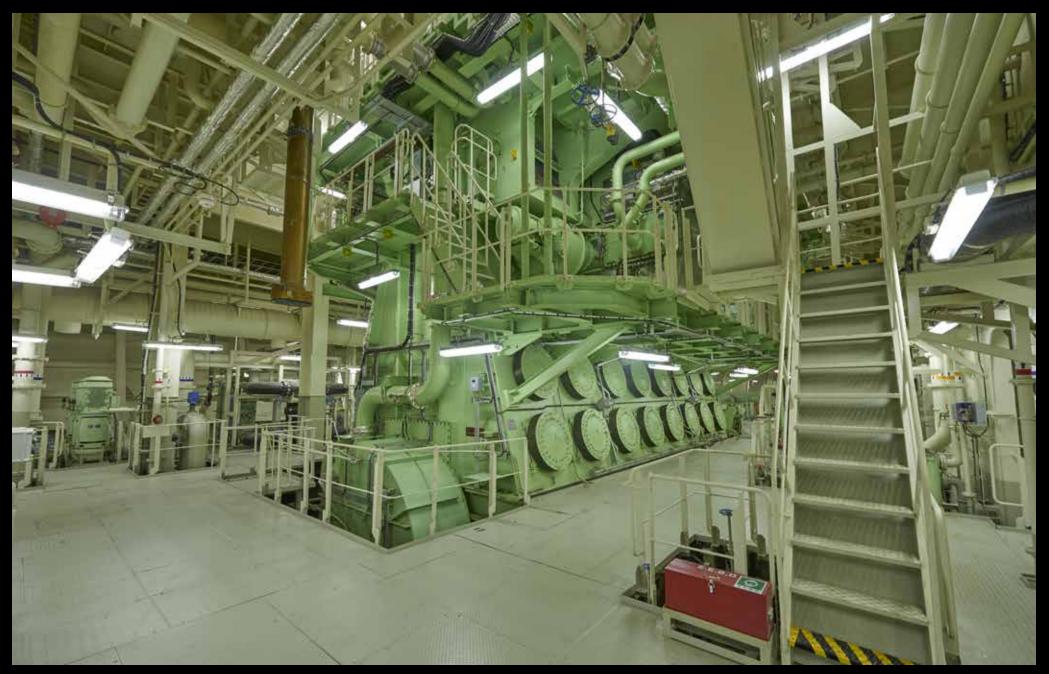
Dutch King's day in Dordrecht

© Jonkmanfotografie.nl



"Mærsk Mc-Kinney Møller" at APM Terminals I in Rotterdam

© Jonkmanfotografie.nl



"Mærsk Mc-Kinney Møller" the first Triple-E vessel

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© Jonkmanfotografie.nl



"Mary Mærsk" another Triple-E vessel at APM Terminals II in Rotterdam

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© Jonkmanfotografie.nl



Universal growth model for container transferia nearby deepsea terminals. Picture shows a transferium for a throughput of 500,000 TEU/year.

4 stack lanes, 8 OHC's, quay length 150 m<sup>1</sup>

- Handling speed:
   shuttles 100-160 moves / hour (200-320 TEU/h)
   trucks 100-120 moves / hour (200-240 TEU/h)

Terminal area: ± 3.0 hectare Stack capacity: 3,300 - 4,100 TEU





http://www.ngict.eu/website/home/animations/

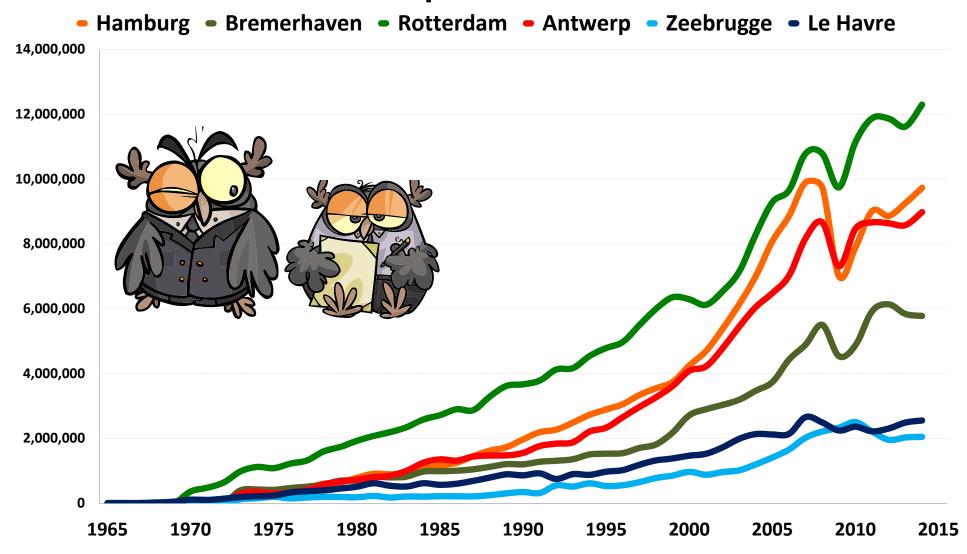
Higher performance, lower costs and a lot more advantages!



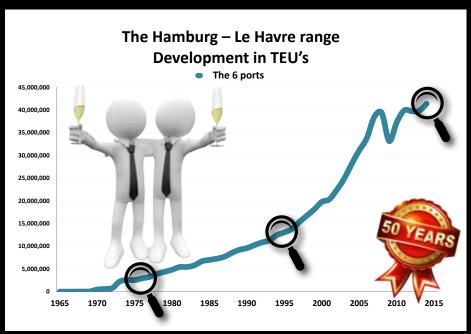


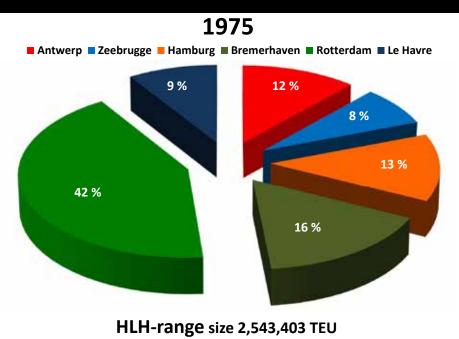


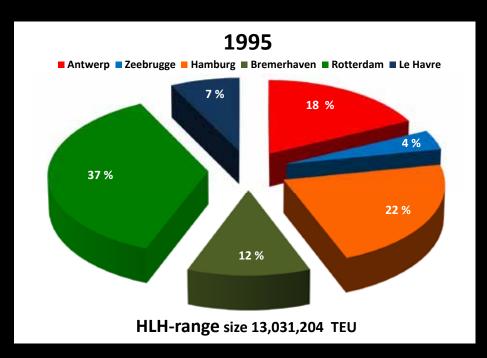
# The Hamburg – Le Havre range Development in TEU's

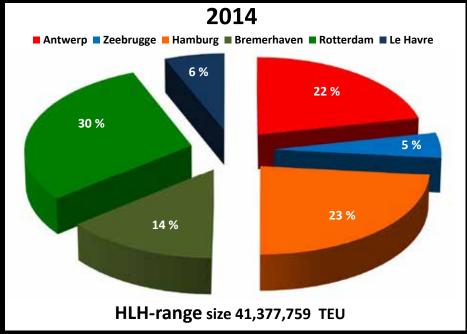




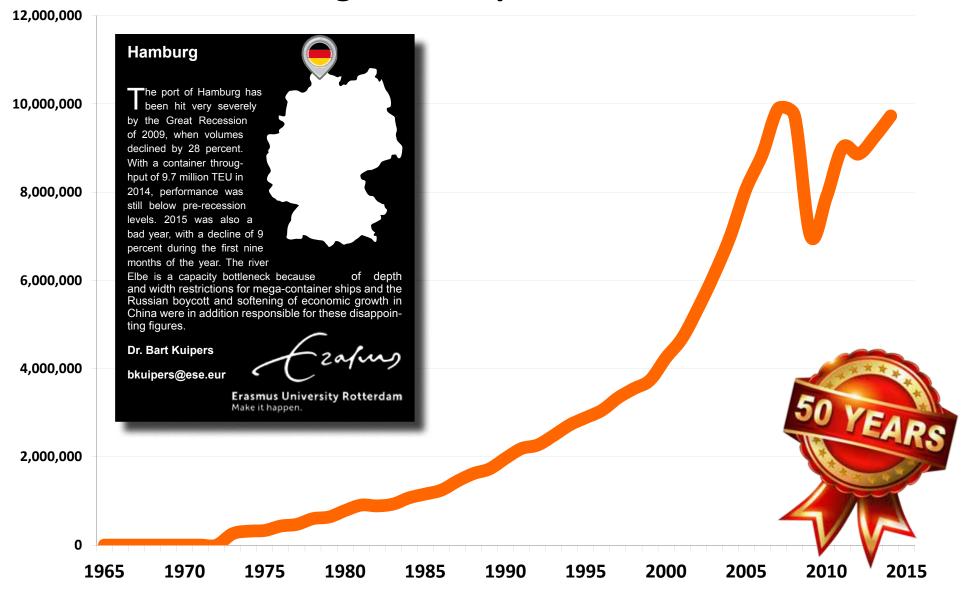






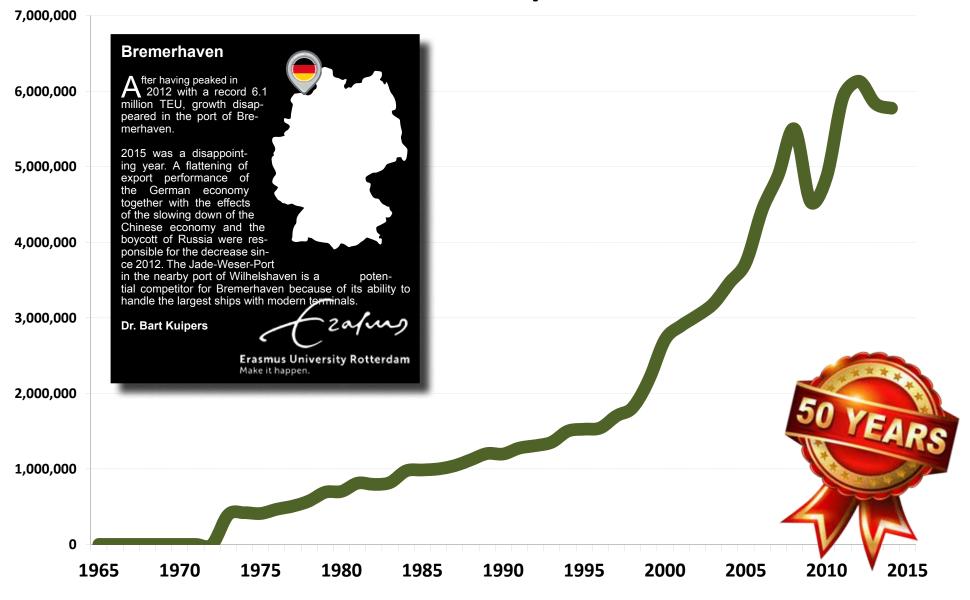


# Hamburg – development in TEU's



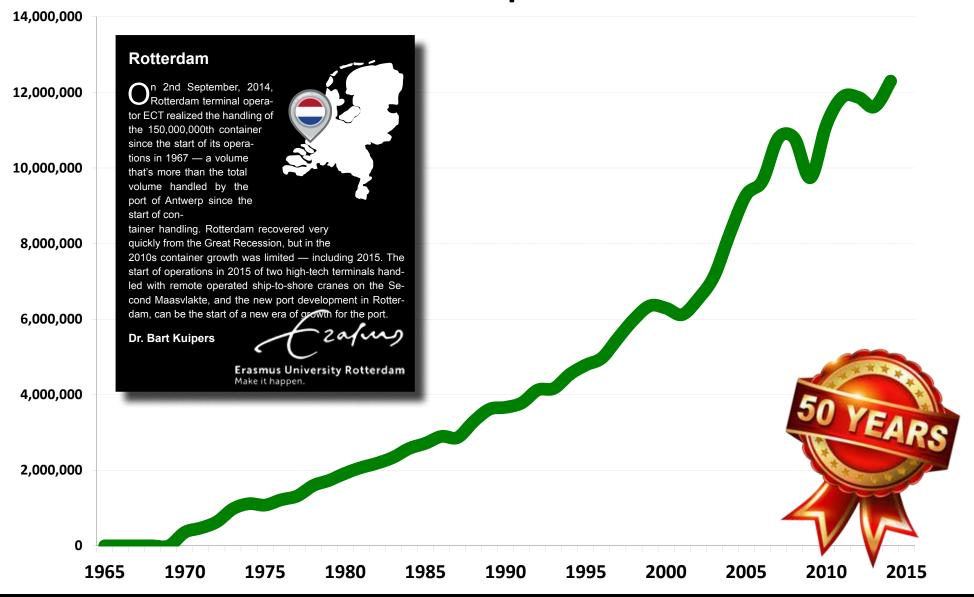


# Bremerhaven – development in TEU's





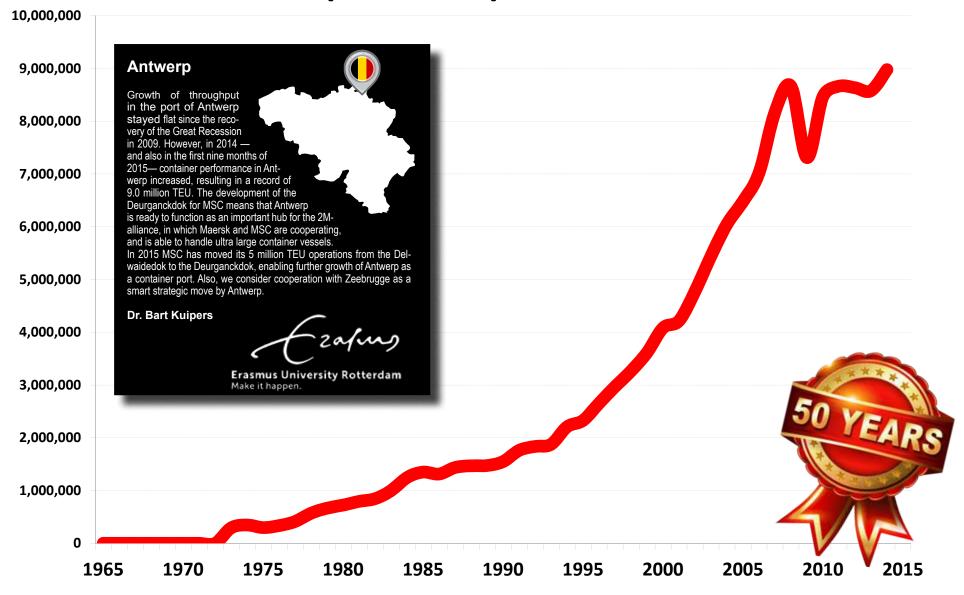
# Rotterdam – development in TEU's





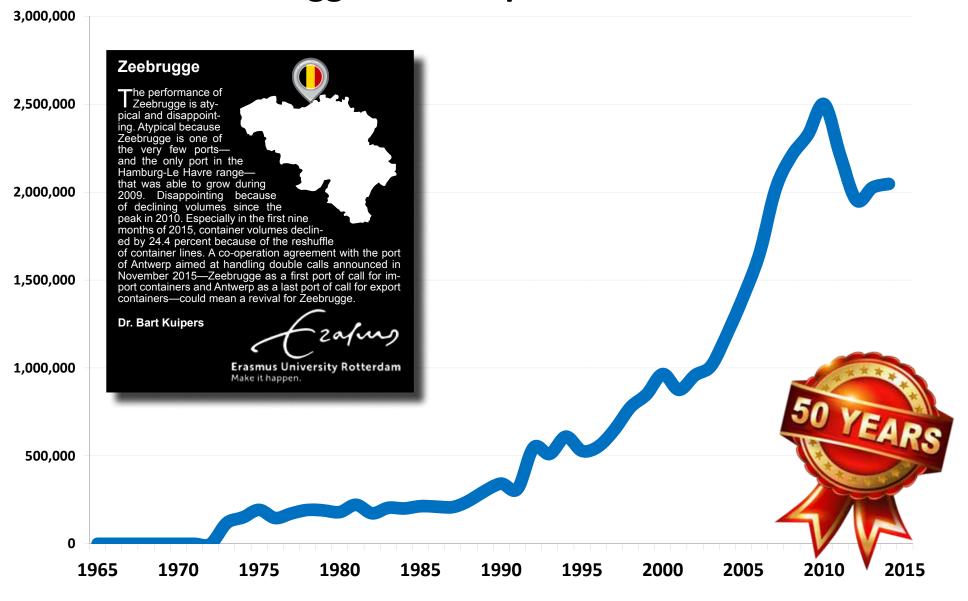


# **Antwerp – development in TEU's**



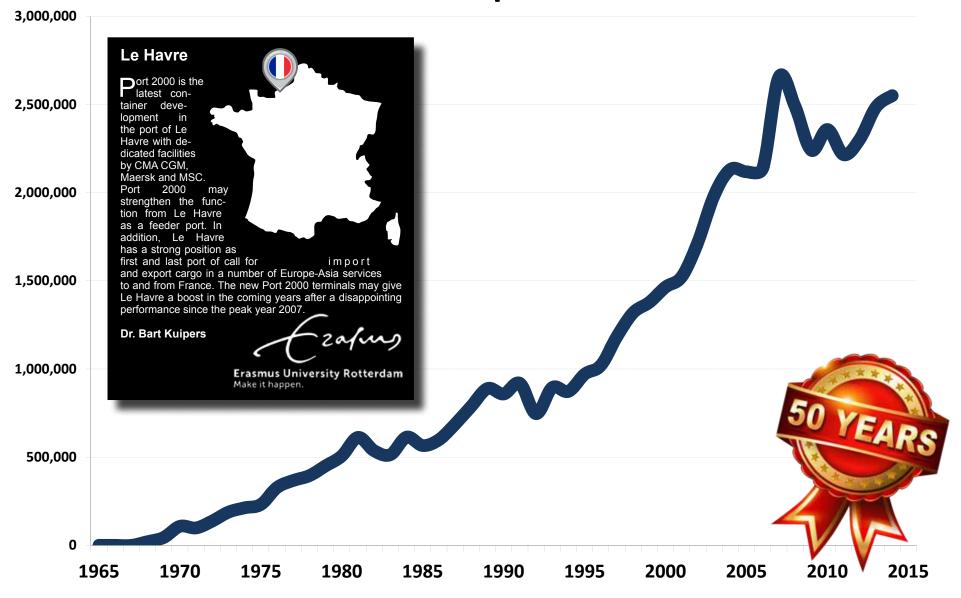


# Zeebrugge – development in TEU's





# Le Havre – development in TEU's





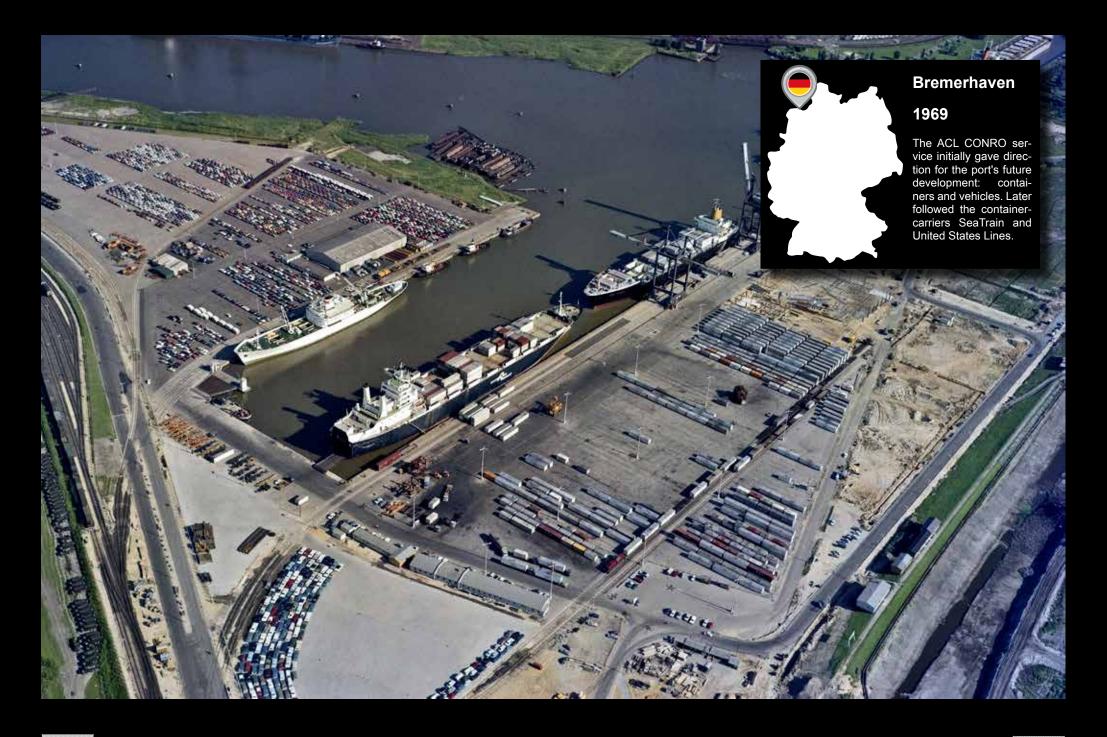


































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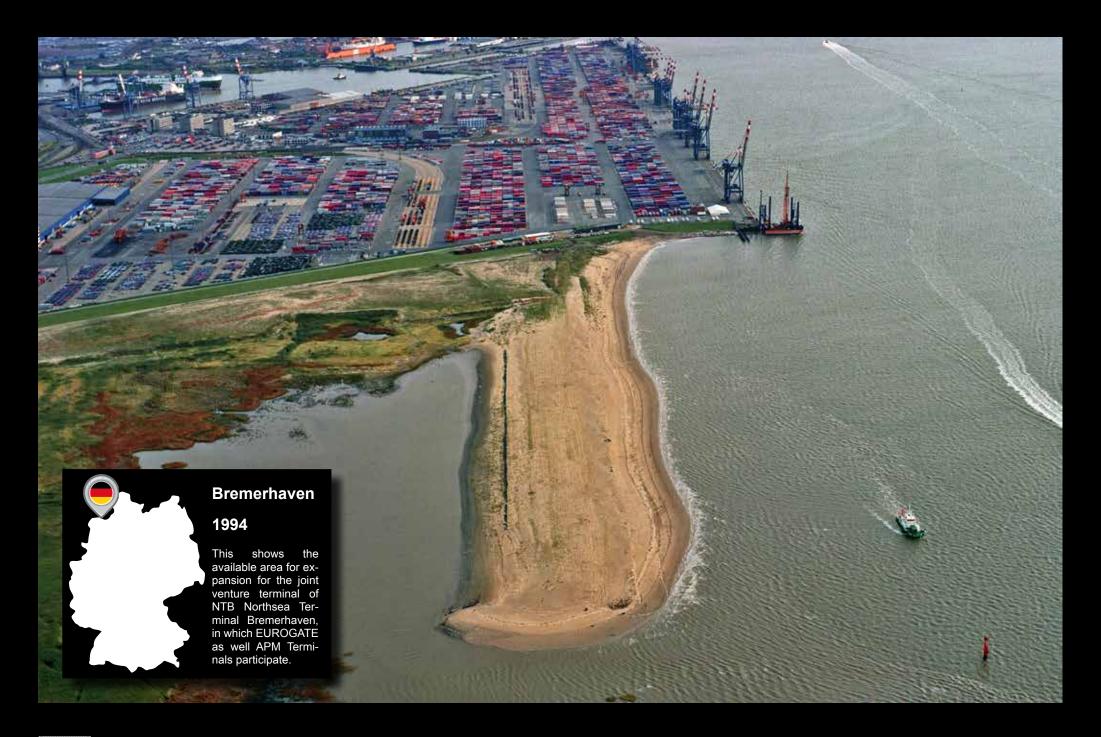




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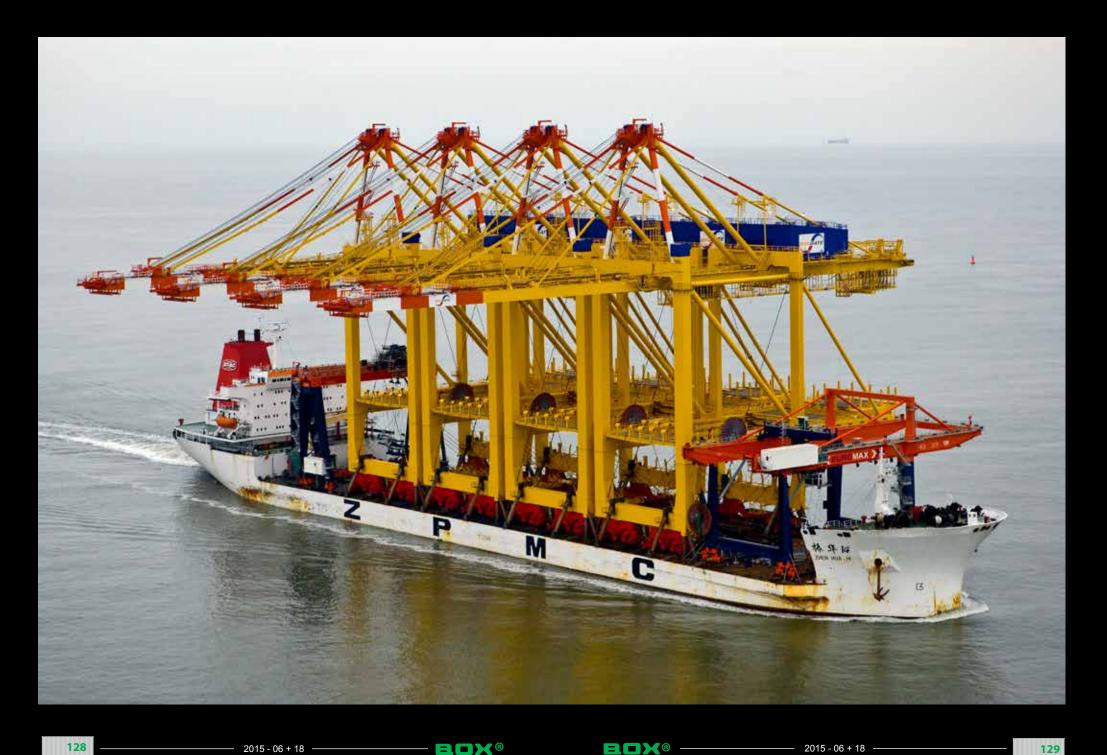












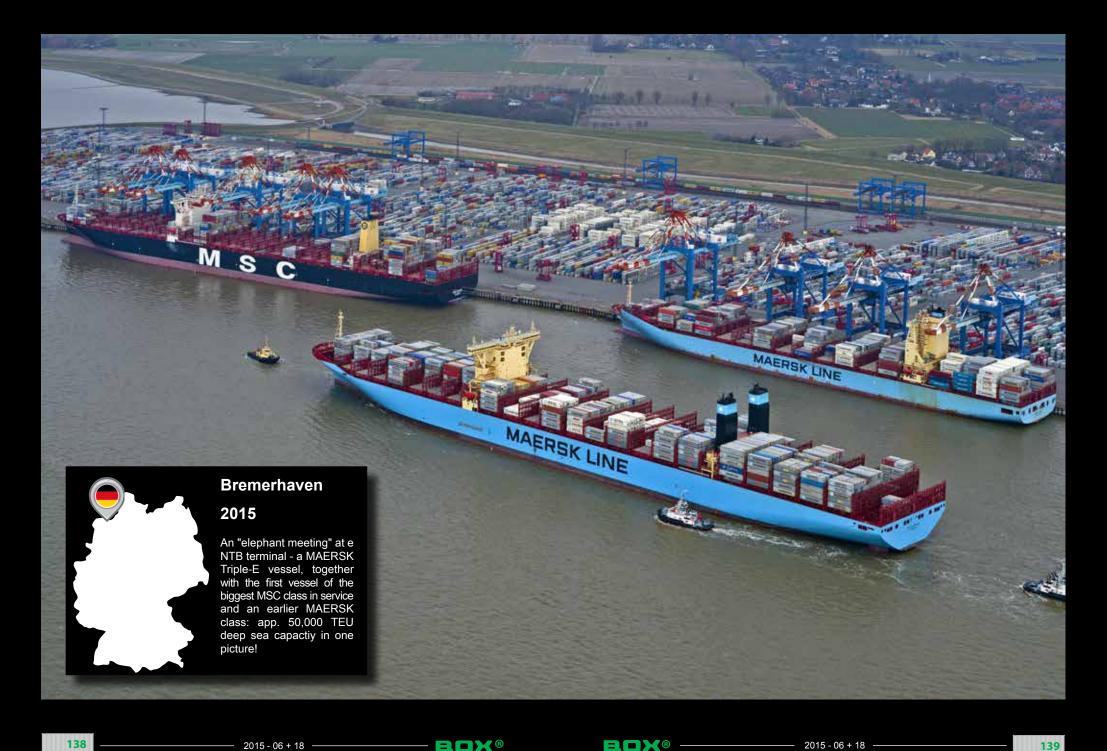




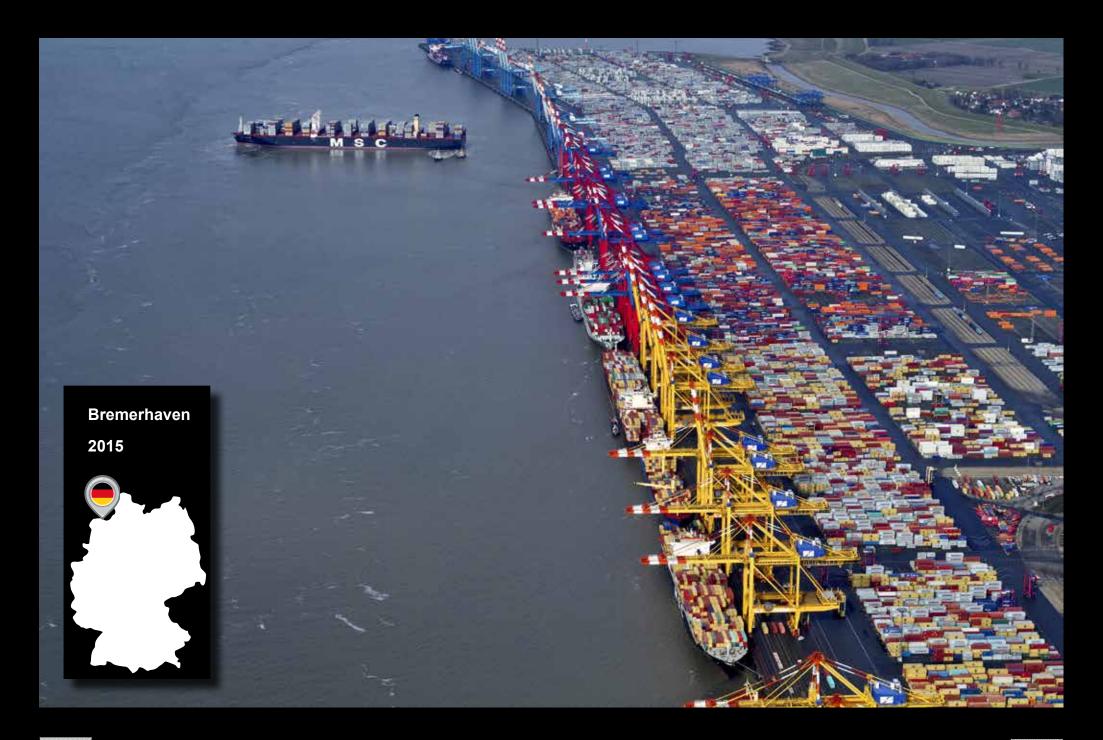




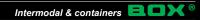








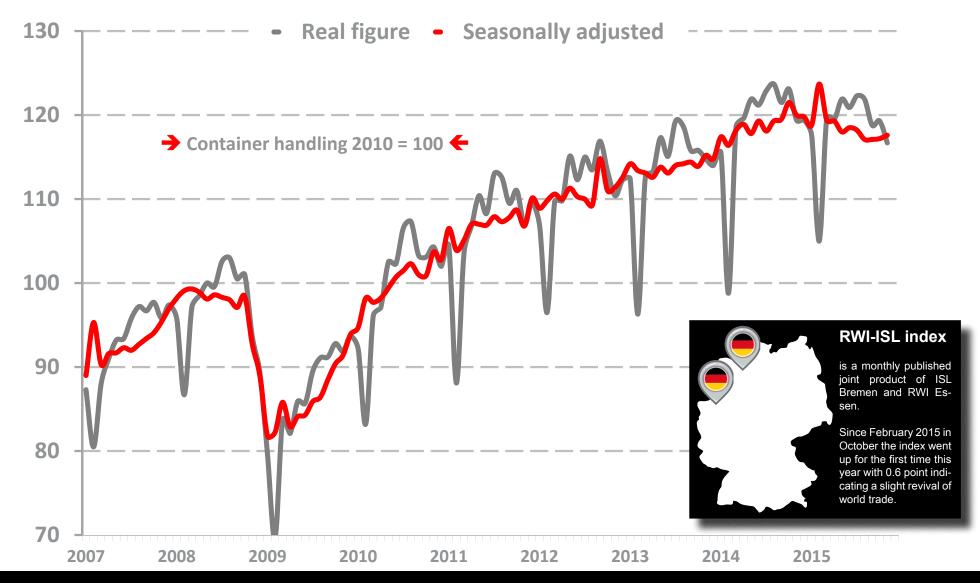






## **RWI-ISL** container handling index

Estimations on informations from 30 ports ± 65% of the index December 2015 - flash estimation based on November figures





### Top 15 container ports in Europe

Container volume in 1,000 TEU

R		1985		2000		2014	Ratio 2014/1985
1	Rotterdam	2,655	Rotterdam	6,274	Rotterdam	12,297	4.6
2	Antwerp	1,243	Hamburg	4,248	Hamburg	9,729	8.4
3	Hamburg	1,159	Antwerp	4,082	Antwerp	8,978	7.2
4	Bremerhaven	986	Felixstowe	2,793	Bremerhaven	5,796	5.9
5	Felixstowe	726	Bremerhaven	2,752	Algeciras	4,556	13.0
6	Le Havre	566	▲Gioia Tauro	2,653	Valencia	4,442	14.6
7	Marseille	488	Algeciras	2,009	Felixstowe (*)	3,734	5.1
8	Leghorn	475	Genoa	1,501	Piraeus	3,650	18.5
9	Tilbury	387	Le Havre	1,465	Gioia Tauro	2,970	**1995
10	Barcelona	353	Barcelona	1,388	Marsaxlokk	2,900	**1987
11	Algeciras	351	Valencia	1,310	Le Havre	2,554	4.5
12	Genoa	324	Piraeus	1,161	Genoa	2,173	6.7
13	Valencia	305	Southampton	1,064	Zeebrugge	2,046	9.4
14	Zeebrugge	218	Marsaxlokk	1,033	Barcelona	1,893	5.4
15	Southhampton	214	Zeebrugge	965	Southampton (*)	1,748	8.2

<sup>(\*)</sup> estimate

Source: Theo Notteboom, based on statistics individual port authorities

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### What the past tells about the future

The above compilation of Prof. Dr. Theo Notteboom tells us a lot of different things



The strong upcoming container handling in the port of Marsaxlokk (Malta) tells us that even without any hinterland and without the hundreds of millions of consumers in the backyard, a development as container port is

Of course there is a hinterland but outside the country and related to other ports which are being connected via this port which is the hub port for one or more deep sea services. The

Orkney islands once dreamed about the creation of such a hub port, but it stayed a dream. Trades develop and change so the function of a hub port is also related to and depending on those developments.

And even when trades did not change the hub port could be exchanged for another hub port because of better -geographic and therefore economicparameters. Further growth of the big 15 will depend on different aspects, besides world trade.

Their role in hub functions is for deep sea operators, for which the direct hinterland is of no importance.

The connectivity with the direct hinterland and intermodal options, hinterland size and penetration, frequency of the connections and terminal density are important factors.

Green field port developments in new locations will have a tough start up because intermodal connectivity, regular (and growing) volume flows, and a mix of services, quality and competition are needed to finally create the critical mass for balanced intermodal development and stability.

Hub function related volume shifts will slow down in some and in other locations accelerate the growth of ports.

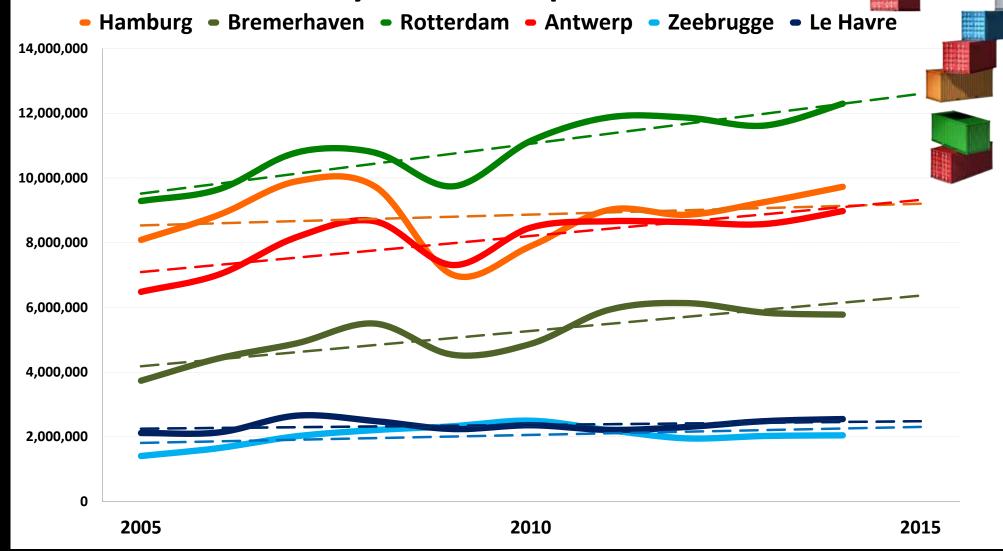
The Baltic developments initiated in Gdansk in 2009 will at least surely put this port into this compilation in the future - but which ones will be put out of it?

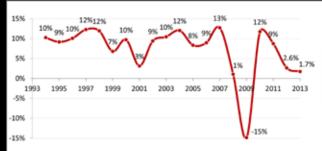
Jos W. Denis



<sup>(\*\*)</sup> year of start operations

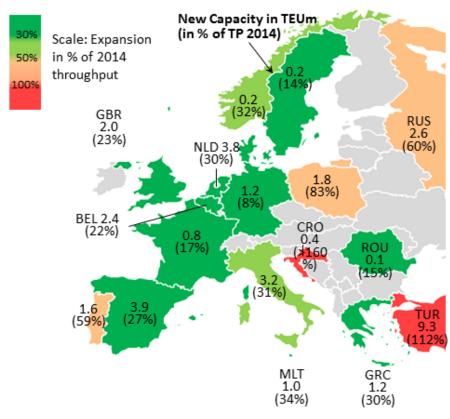
# The Hamburg – Le Havre range Last 10 years development trend



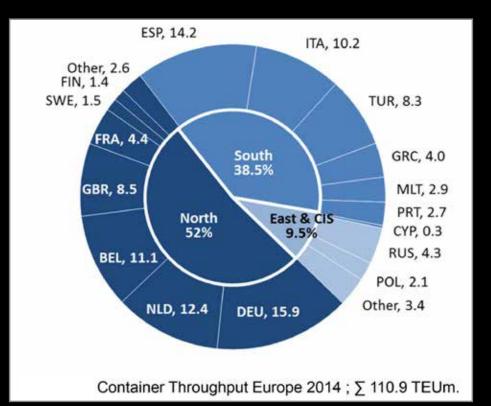


Growth in %	2012-14		
WORLD	4.6		
America	3.5		
Europe	2.9		
North	1.3		
South	5.2		
East	9.6		
CIS	-2.0		
Mid East/ Africa	4.5		
China	6.1		
Asia (ex China)	4.7		

Development of Container Throughput 2000 - 2014 (TEU in %)



Planned Capacity Expansions in Europe between 2015 and 2017



## **CTPP 2015**

# tells us about the already planned future

In the study "Container Terminal Project Pipeline 2015" market analyst Daniel Schäfer unveils the future planning of port developments around the globe.

The global throughput has grown with 4.2% in the period 2012-2014, but the wave band differs from -2% (CIS) up to +9.6% (in East Europe). This means that besides growth of volumes via certain ports there are also substantial shiftings of volumes going on, which means putting a brake on the growth or even loss of volumes.



**Contact** 

dschaefer@dsresearch.de





#### **Felixstowe**

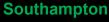
In 2014 the port has handled 3,734,000 TEU and since 1985 has been ranked in the upper part of the 15 largest container ports in European. After port extensions for 2020 the 6,000,000 target is the focus. In the neighbouring port of Harwich an extra area for another 2,000,000 TEU is available and guarantees the terminal operator Hutchison excellent opportunities for growth both in deep and short sea markets.

#### London

On 6<sup>th</sup> November 2013 this new DP World terminal on the former SHELL Haven site opened its doors. Compared with Felixstowe and Southampton, London Gateway is an all weather terminal without their restrictions. It's closer to the London market and has a barge connection (containers with waste but combinable with maritime containers).

It is estimated that this terminal will save nearly 100,000,000 truck km per year and take hundreds of trucks from the road daily. So with this background London Gateway can break the growth ambitions in Southampton and Felixstowe.

In the first phase London Gateway is targeting 3,500,000 TEU and in the second phase another 3,500,00 TEU capacity can be added. Both steps together generate a higher capacity than the actual volume of both Southampton and Felixstowe together.



The port had a container performance of 1,748,000 TEU in 2014. According the port masterplan (November 2009) it plans 2.7 million TEU in 2020 and 4.2 million TEU in 2030. The port has a strategic reserve area in case further expansions will be necessary.

In November 2015 DP World acquired the remaining 49% shares in the terminal and with both Southampton and London Gateway DP World has two excellent locations in the South of England, both intermodally well connected -London even barge connected- and close to main British markets.

Deep sea vessels of all main trades pass very close to the port which guarantees for quick and efficient berthing.



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Le Havre - MSC Oscar



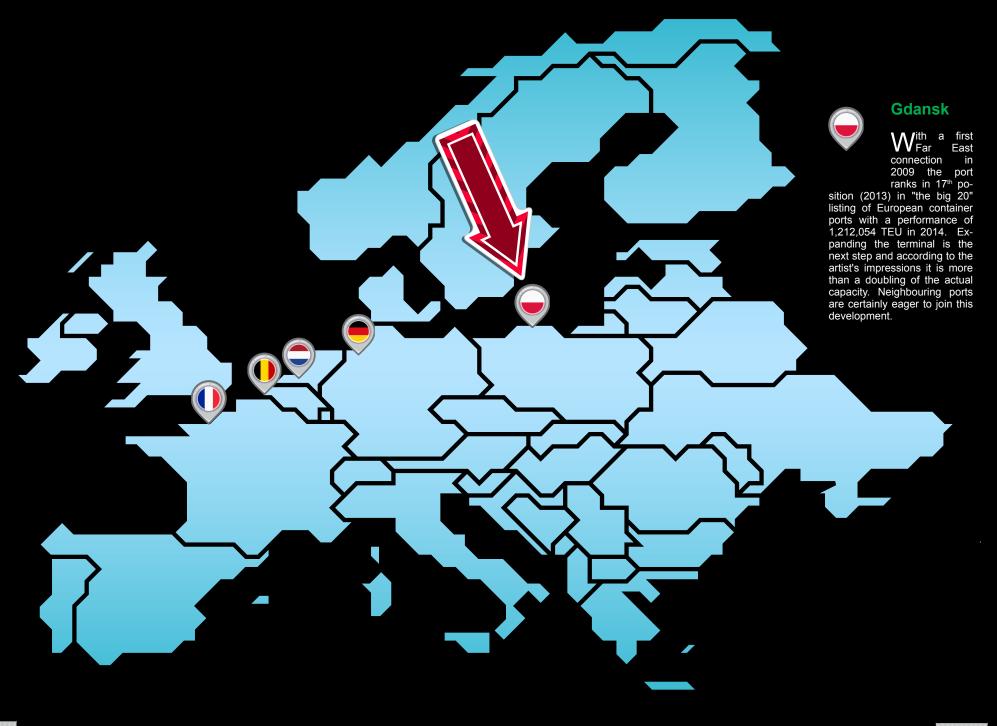
Le Havre - CMA-CGM Bougainville

© Vincent Rustuel HAROPA PORT



Le Havre - CMA-CGM Bougainville

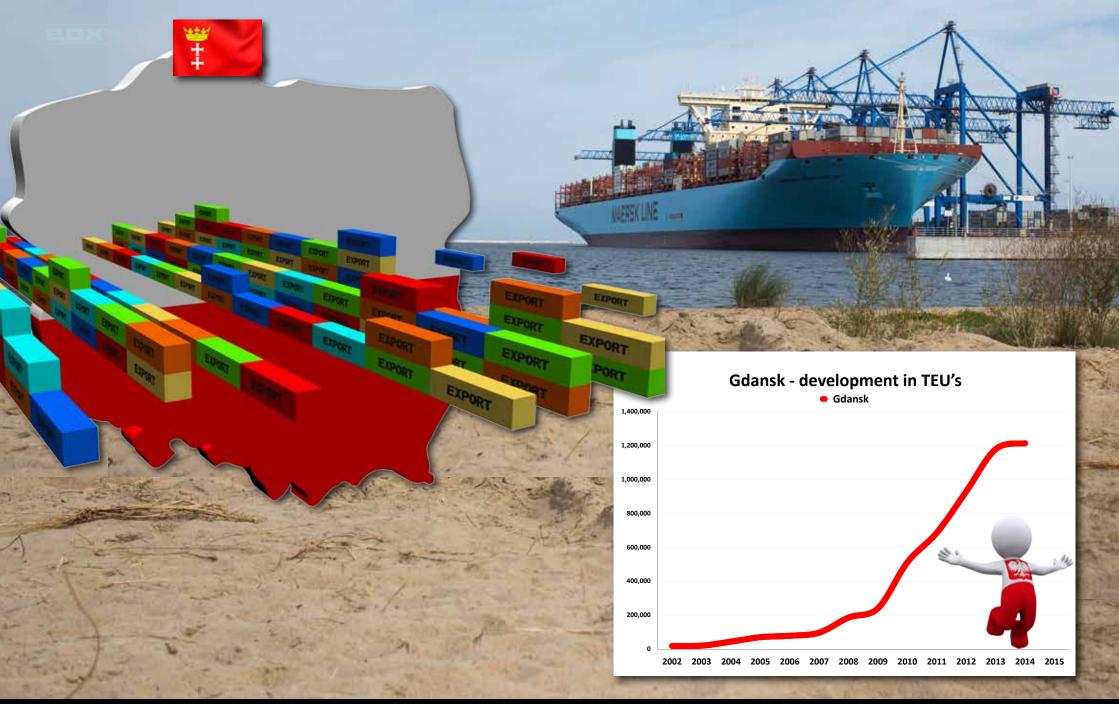
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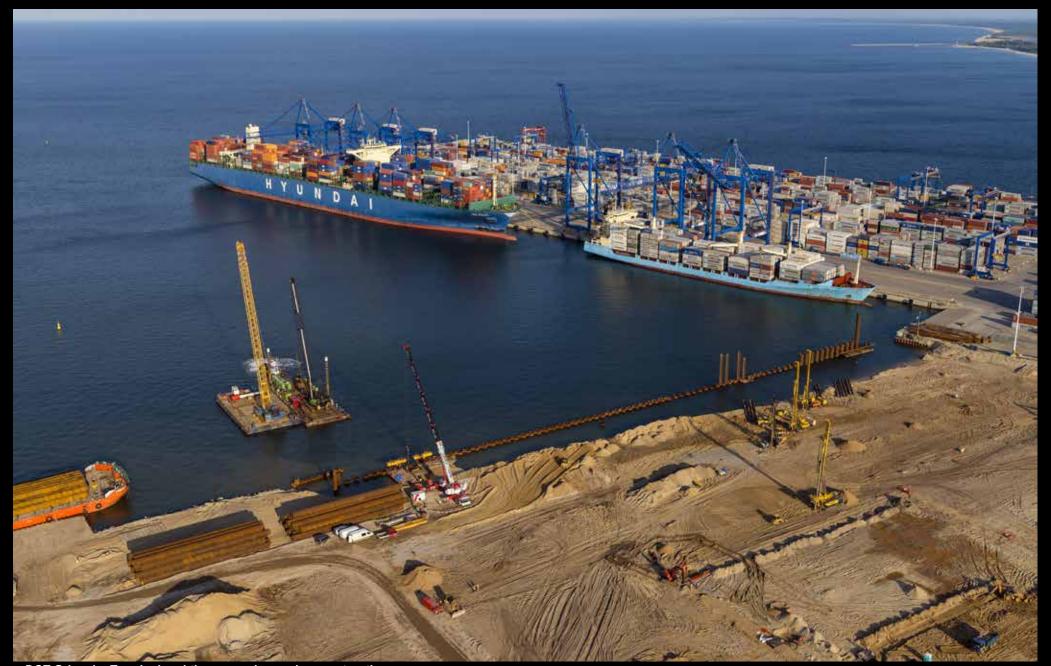


"Mærsk Mc-Kinney Møller" at DCT Gdansk

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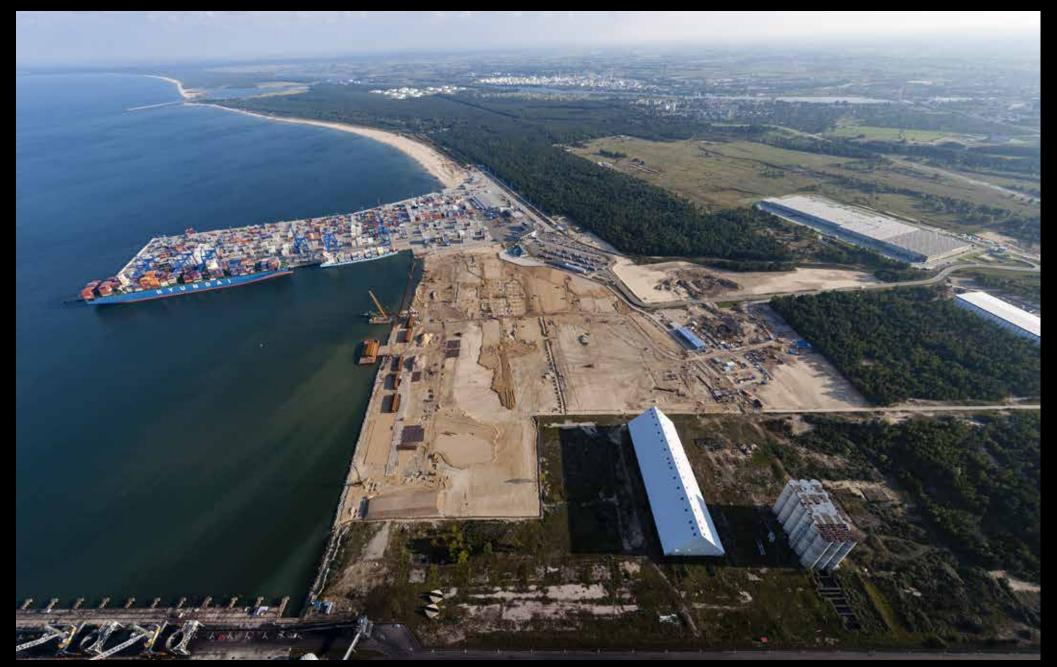


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© DCT Gdansk - Terminal and the expansion under construction

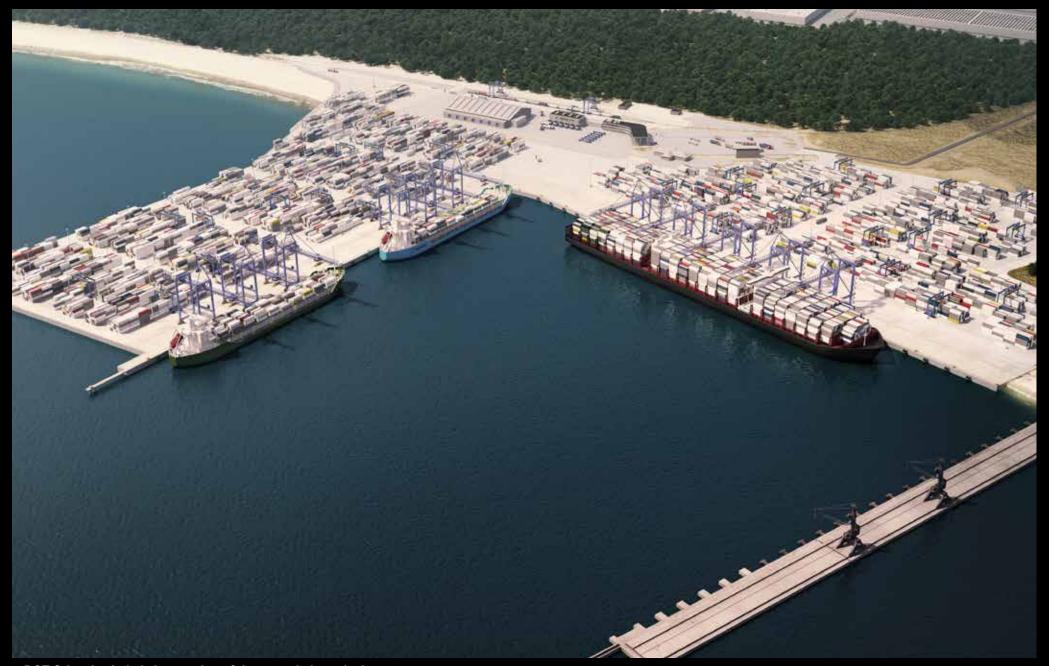
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© DCT Gdansk - Terminal and the expansion under construction



© DCT Gdansk - Artist's impression of the extended terminal



© DCT Gdansk - Artist's impression of the extended terminal



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© DCT Gdansk - Artist's impression of the extended terminal









La Spezia - Terminal contship italia

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Melzo - Milano Rail Hub

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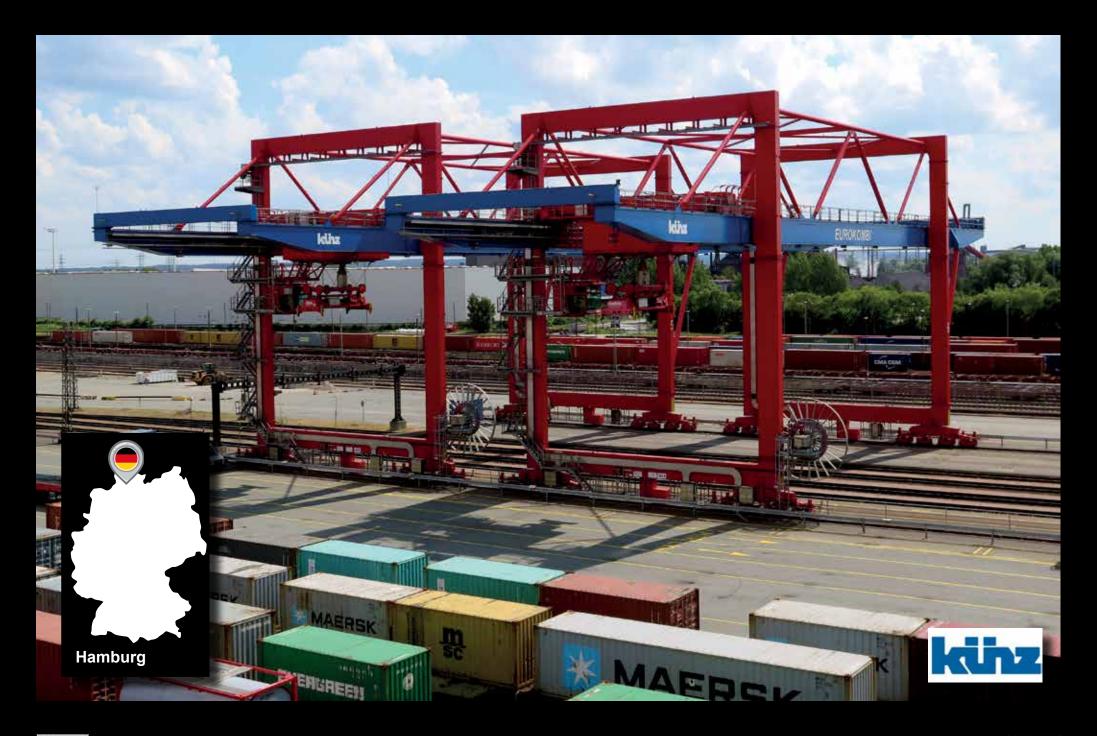


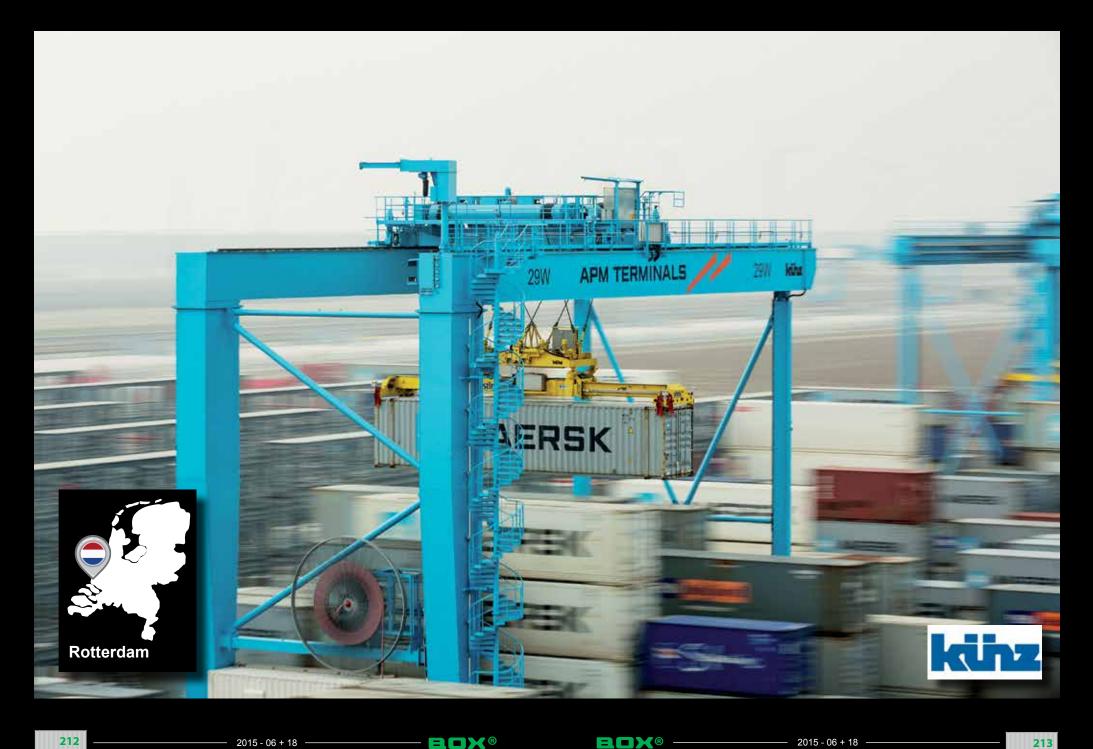


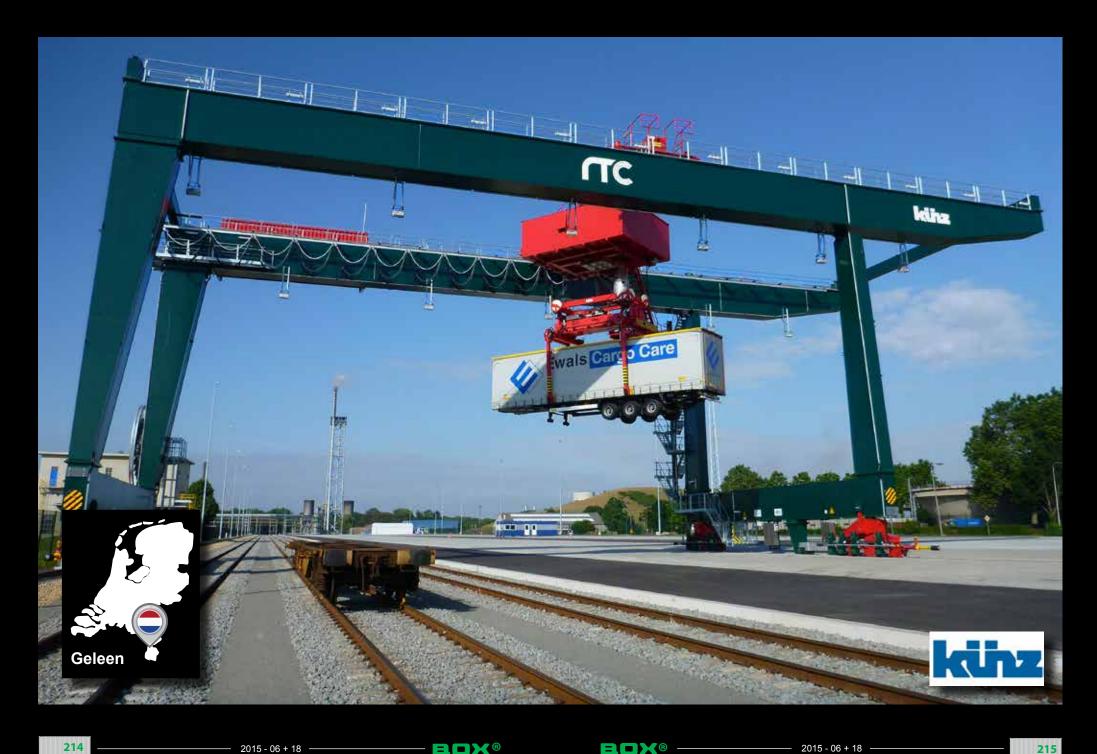
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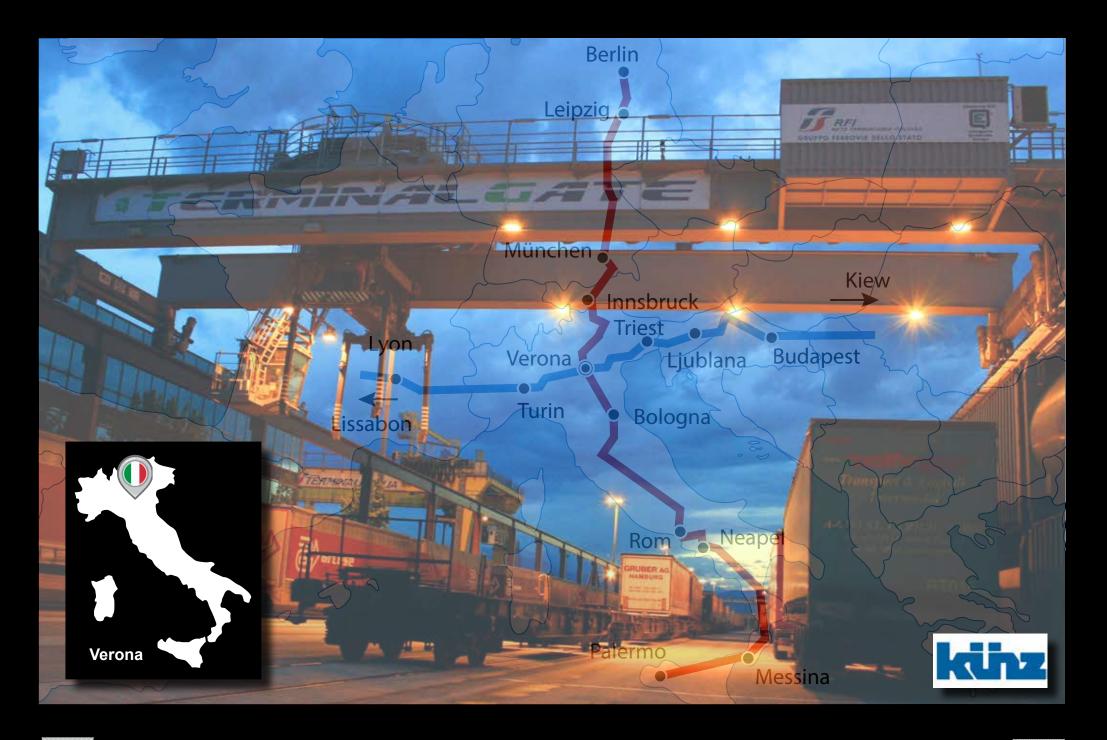


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# KOCH's new generation cranes

rans Koch, regularly reading about the giant construction dimensions (weight and cost wise) of the new container terminals, wondered if constructional improvements could be found in order to reduce weights (and therefore forces) on the quay in combination with a higher performance per hour – so a better productivity per sqm.

The results of his thinking, the developments he subsequently made and the multiple applications arising from this, are so fascinating that we have already featured it several times in our magazine because of the more or less unlimited applicability: from deep sea terminal to inland barge terminal, inland hub terminal and trimodal terminal to a factory or even an integrated small terminal distribution centre and of course also for a start up terminal.

Simplifying the system you could say that the whole area on which containers must be stacked and handled is reachable with overhaul cranes. The overhaul cranes are running in their lanes but they are doing this on two levels which anables them to pass another crane in the same lane but working on the higher or lower level. The cranes you can describe as a kind of cage constructions in which 4 TEU (2 x 20' or 2 x 40' or combinations with 30' and/or 45' containers) are carried, lifted and lowered.

The overhaul crane is perhaps one of the oldest crane types, but still very popular and in use in a lot of fields where bigger lifts occur. Because of the longer and greater construction of one or more overhaul crane lanes, the forces which have to be caught are easier to catch and distribute than a sole crane con-

struction standing on a quay with all the musts and needs to handle the steadily growing ship capacities. Having the cranes in the lanes with the possibility to pass each other is a brilliant idea, because it doubles the horizontal moving capacity in the crane lane and the fact that the crane can carry up to 4 TEU means that the number of horizontal moves reduces. The bottom line reduction depends on the spreaders which are in use: deep sea terminals can also handle 4 TEU in one ship-to-shore move and inland terminals have only in exceptional cases a twin spreader. So for inland use this system boosts the handling speed and capacity of a termi-

nal, for deep sea terminals this system brings in the land operation maximising a doubling of the capacity because of the double passing cranes in each stacking lane.

On the next pages you can see and enjoy the great possibilities of the KOCH system which is presented in the various applications:

- ▶ as a huge deep sea land operation tool in combination with the traditional ship-to-shore cranes and straddle carriers
- ➤ as a very efficient transferium, a terminal to collect single containers (truck)

or smaller volumes (small barges) to bigger volumes and specific vessels and deliver them exactly at the time the deep sea terminal wants to have the containers

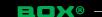
- in a smaller deep sea terminal size it's shown in combination with different ship-to-shore techniques (self geared vessel, port mobile crane) as well as smaller inland terminals: a trimodal terminal and one lane start up terminal
- ▶ the last visualisation is a terminal integrated in a distribution centre, where for example synthetic granulates arrive in containers in bags and leave in bulk.

#### Contact

Frans Koch

info@kochadviesgroep.nl











### The deep sea terminal solution





- > space in port areas is expensive and this land operation improves the use of terminal space
- higher handling speed because of the double cranes (or even more when wanted) running in the single lanes
- ▶ high redundancy because of the double and crossing cranes - a period with a "death stack" is history
- ▶ for completely new build terminals or integrated in existing terminals: see and understand the system and count your advantages!





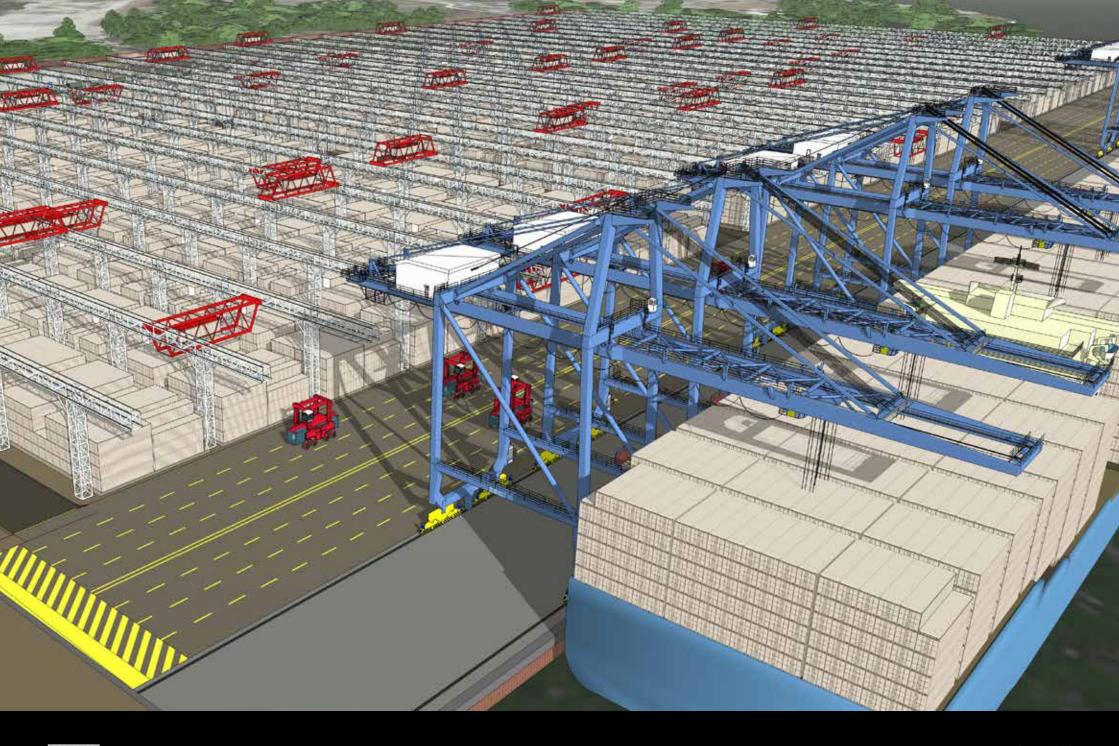
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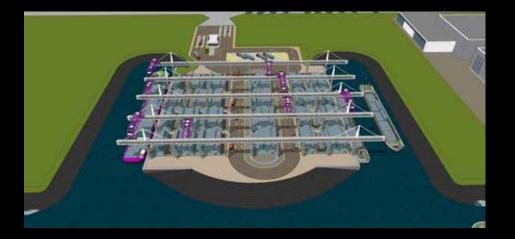


#### The container transferium





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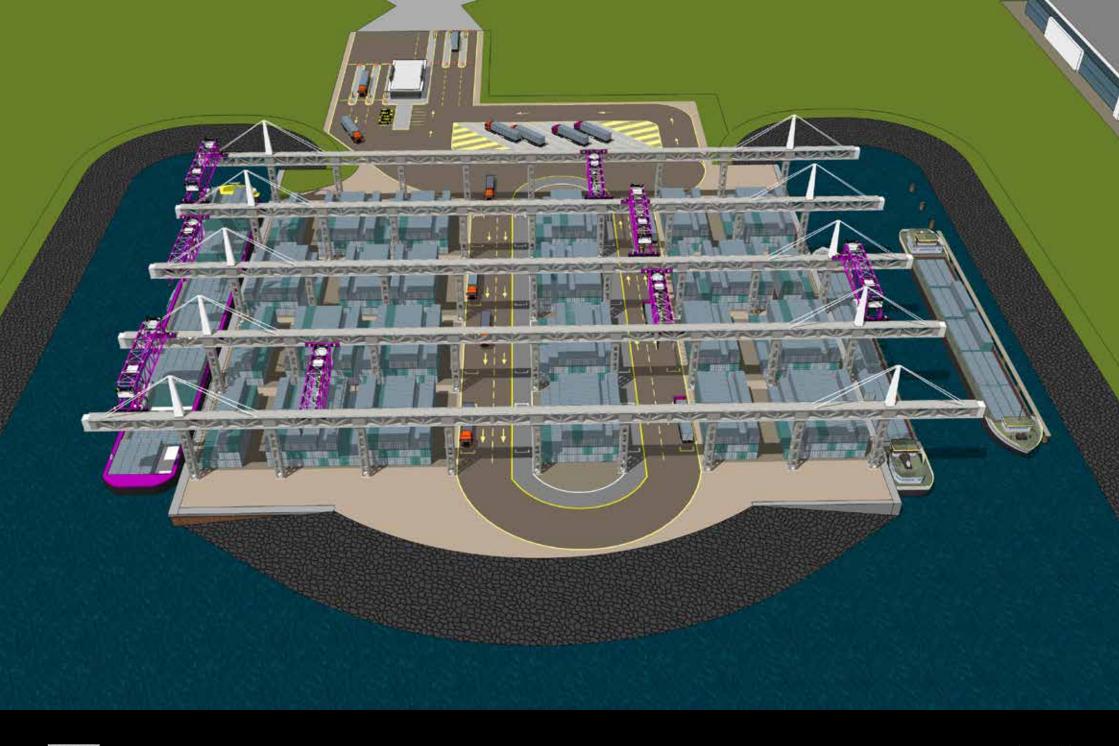






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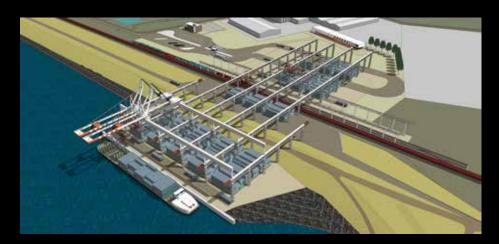






## The adaptional flexibility





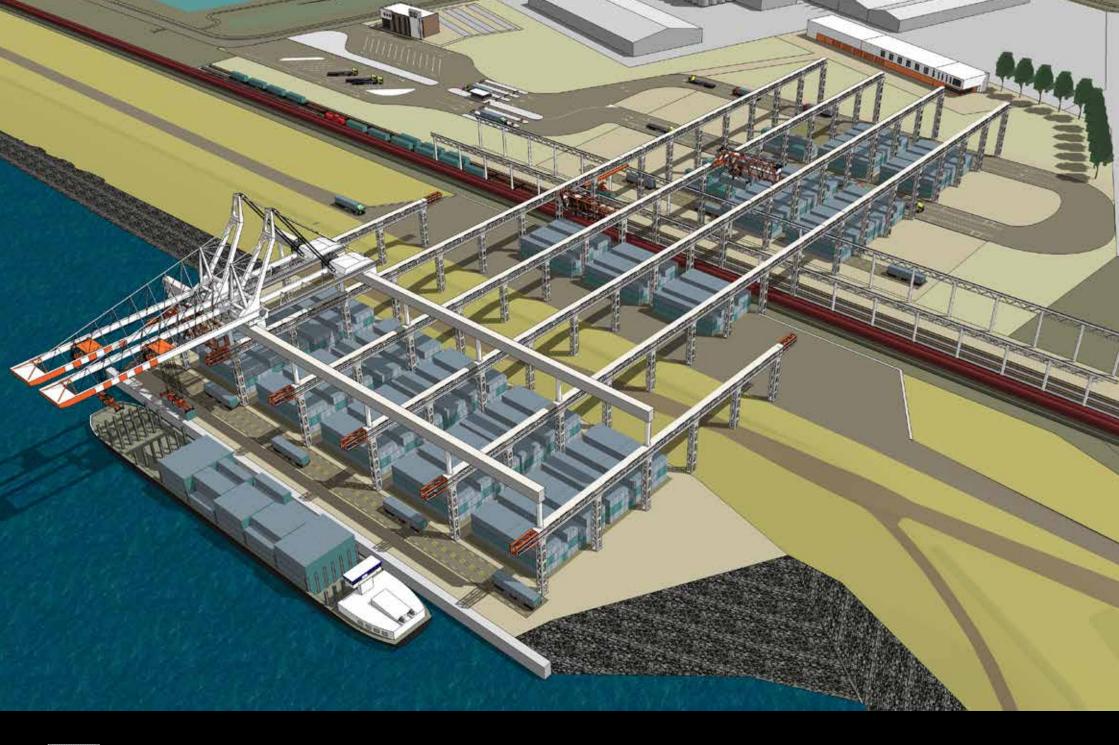
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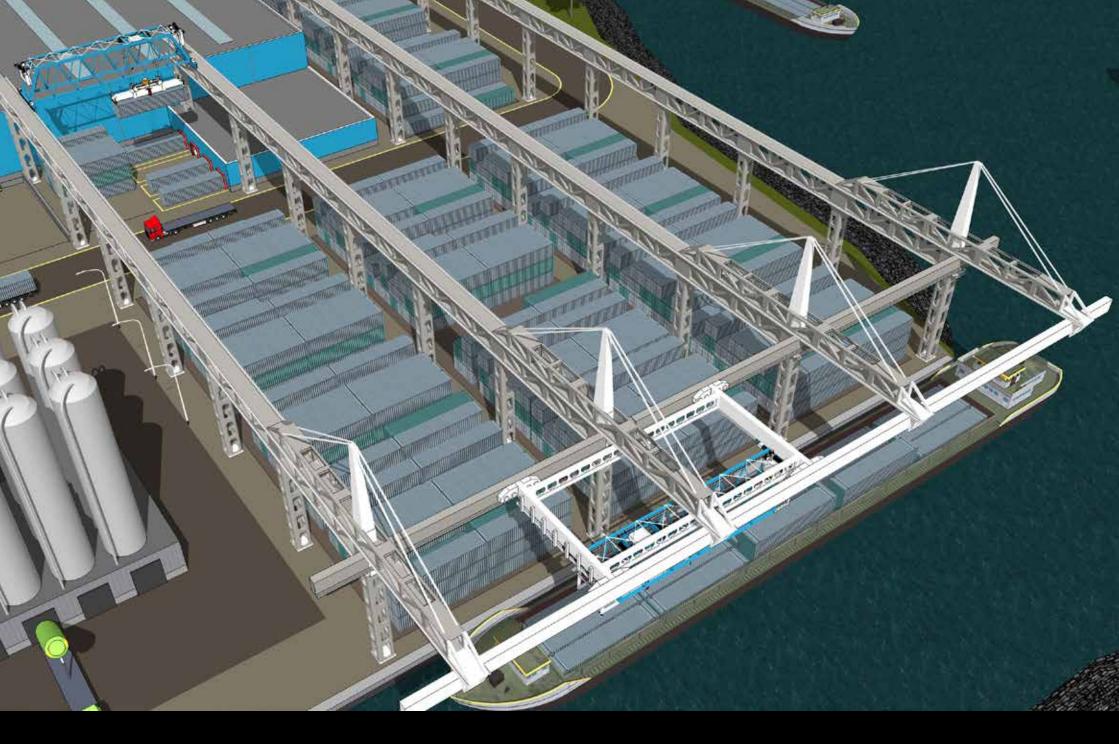




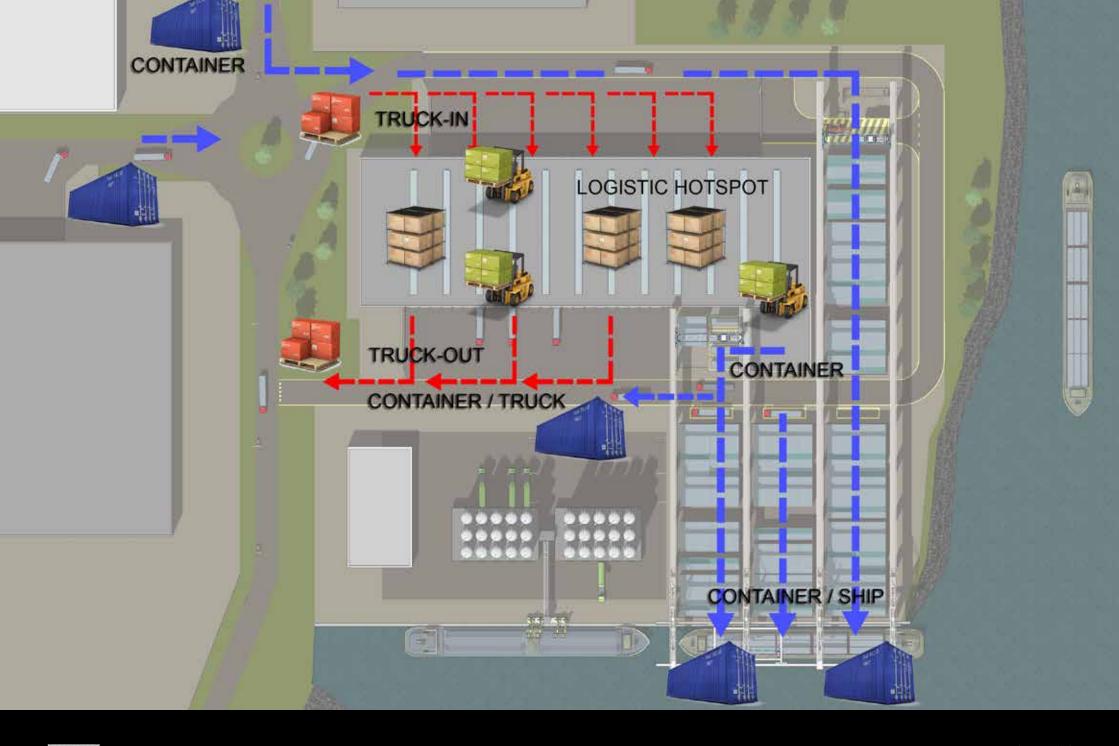
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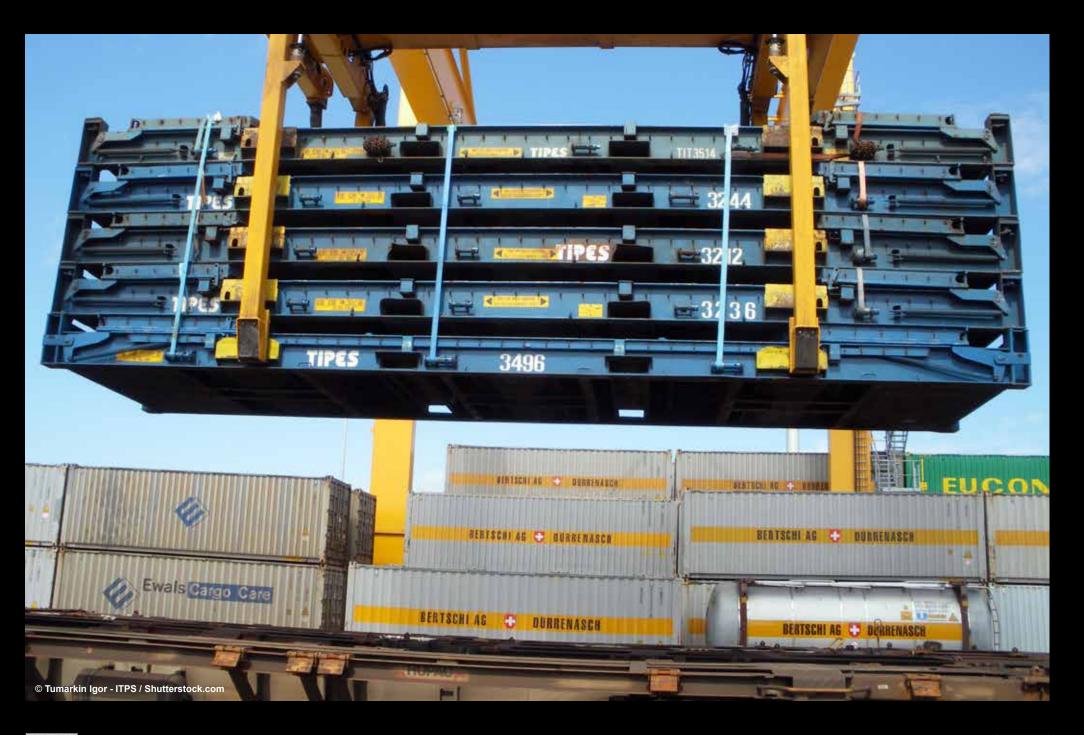




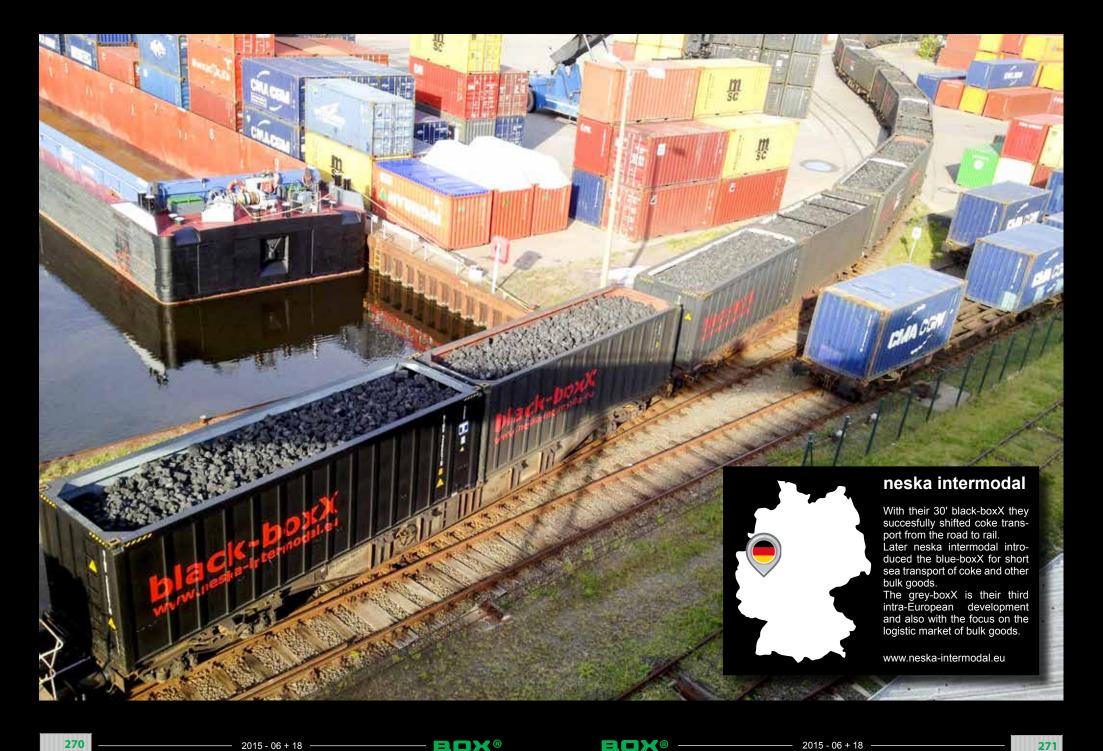


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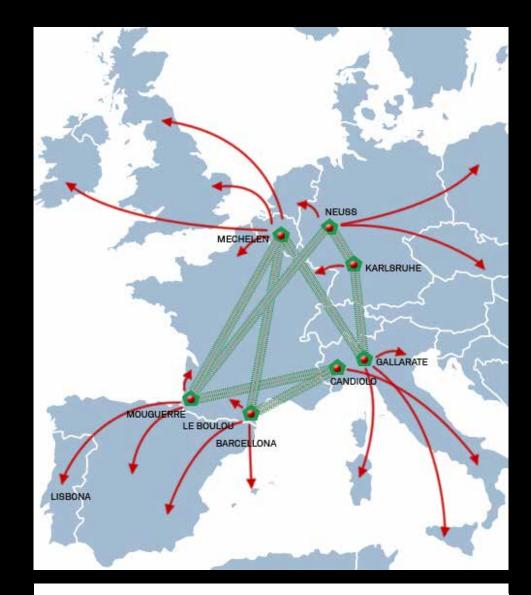
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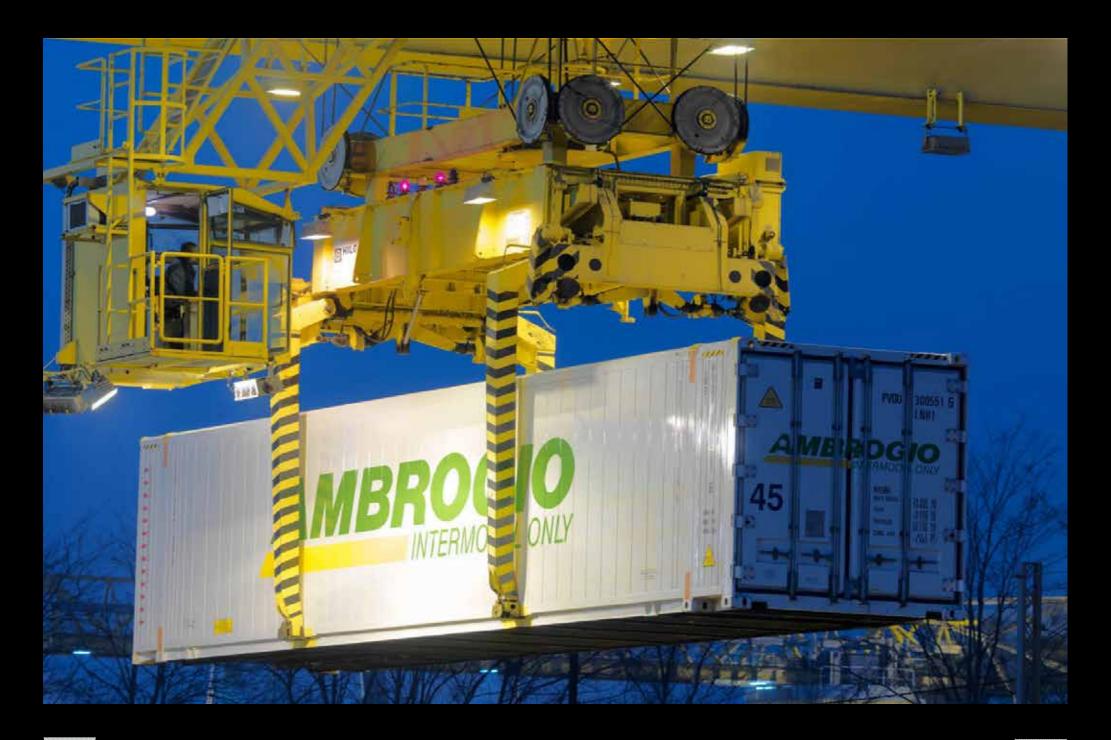








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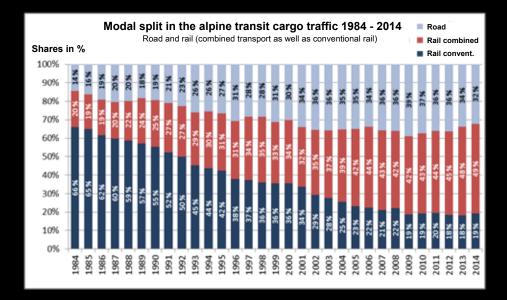




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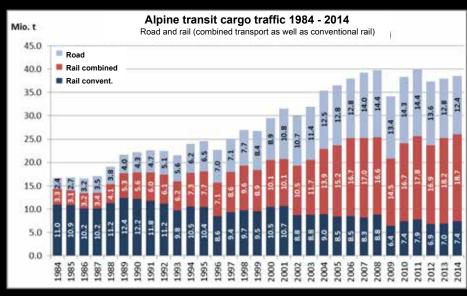


## now the bad news...

The completion and inauguration of the GBT (Gotthard Base Tunnel - for rail) next year, is of course also a great opportunity to modernize and renovate the existing Gotthard road tunnel. So far, so good.

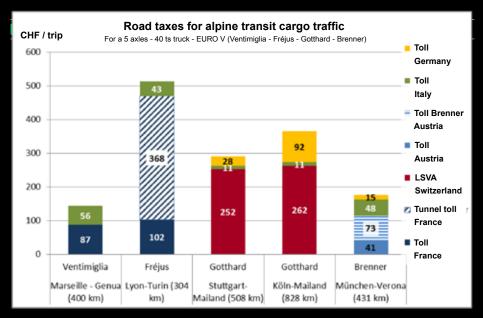
But instead of doing this with a reduced traffic capacity in the existing tunnel, plans came up to build a second road tunnel to have a second option in case of repair and maintenance or emergencies.

The people's initiative which arranged the plebiscite in 1980 and forced parliament and government to the unique modal shift policy has concerns about this second tunnel that it, instead of the voted modal shift, will lead to more transit of heavy trucks through Switzerland especially the Alps region. In February 2016 the Swiss people vote in another plebiscite about this second Gotthard road tunnel, a "yes" will be a brake on the succesful modal shift untill now.









#### **Benchmark**

The LSVA (the surcharge on heavy trucks in Switzerland in order to shift cargo transport from road to rail) compared with tunnel fees, road usage taxes and tolls in surrounding countries like Germany, France, Austria and Italy for the main transport axles tells us that the LSVA is in line with the other charges, as you can see in the above visualization of these charges for the mentioned transport axles.

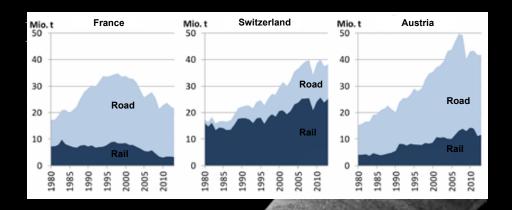
Strengthened with this knowledge, now looking to the graphics on the right page, one first sees that in France and Austria -two other main Alps corridor countries- the balance between road and rail carried cargo is completely different with the realized modal split in Switzerland. Further one can see that the difference in the modal split between these both modes is growing signifi-

cantly and not shrinking.



Even when these countries have also committed to the EU policy of modal shift, these facts tell another story.





So the fears of the Alps initiative that a second Gotthard tunnel will boost the road volumes over the Alps instead of getting them shifted to rail are fully iustifiable.

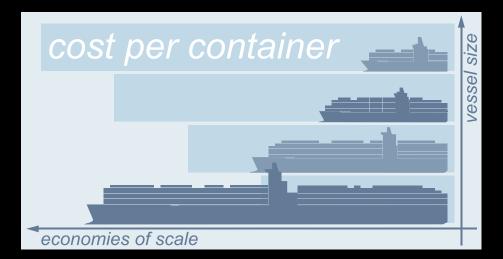
For the sake of the Alps and its unique fauna and flora, the Swiss people living there, but also the various intermodal operators, which are active on the Alpine corridors and the aimed modal shift in Switzerland as well as in Europe, it is not only a tense plebiscite in February, let it be also a guideline for European politics that modal shift is not realized by "parroting" (repeating words like parrots) slogans and phrases, it needs a bit more to get these results!

PLEBISCITE FEBRUARY 2016









#### **Evolution**

The evolution of ships over the past 50 years is clear; from the "Ideal X" with less than about 100 TEU to the 20,000 TEU class which can be watched now more or less daily.

This evolution tells us about the trades, maritime logistic skills, infrastructure (Suez, Panama) and port developments. Trades did evolve and the market parties involved –public and private- engaged to get the fleet developed from big to gigantic as the size dictates the economy of scale. Cranes have a long lifecycle and terminals saw this development with a

laughing and a crying eye (as they say in Germany): they embraced the bigger volumes, but must have hated the inevitable investments.

The length of a ship is generally speaking not any problem at all, but the wider a ship the greater the necessary outreach of the cranes. Nearly all development steps in ship size meant also more rows to be handled, with a growing preference for tandem handling (2 40' container in one move). Putting the growth of the vessel sizes in a 50 years graphic you will see that the steps from 6,000 TEU to 15,000 TEU (initially announced as 12,500 TEU, because engineers were still counting the exact capacity) and from there to near-

ly 20,000 TEU are much closer to each other than the earlier increase steps. The graphic will show a steep line at the end of the 50 years of containers.

#### Whose containers?

Besides ships, ports and terminals (which are all very important) all containers have to find their way into the hinterland: companies which need their cargo in the container or companies which ship cargo. All these companies sending and receiving cargo in containers are spread over the European map e.g. as dots, with high dot concentrations in the main economical areas, where you can't see the single dots anymore. They all need their containers in time (import) or shipped in time (export).

So together with the above mentioned developments at the sea side, the European inland market has been supplying needs and expectations. Often the focus is only on the 450,000,000 consumers, because it is difficult to count the size of the export markets by number of consumers. The supplying needs are simple: transport time window, reasonable price and plan-ability.

In the Hamburg – Le Havre range there are currently more than 40,000,000 TEU handled. A percentage of this volume is "footloose": containers for Oslo handled in Bremerhaven can be handled in Felix-

stowe as well. Containers for Meerhout (B) handled in Hamburg does not make any sense – so these containers are geographically "bound" in Antwerp, Zeebrugge or Rotterdam.

Another share of the sea port handled volumes are the intra-European container volumes. United Kingdom, France, Mediterranean, Spain, Portugal and the ScanBaltic. Thanks to lots of pioneers and the support of the EU –Roads of the Sea- this kind of volume has grown and keeps growing.

So, the bottom line from the 40,000,000 TEU: a share is physically going through the different deep sea terminals and handled via trucks, trains and barges because it has a destination or origin in the European hinterland.

Another share of the volume leaves from or arrives at the terminals by sea with smaller vessels to cover the destinations where the big vessels do not call. Because of the double sea handling (from the deep sea vessel to shore, from shore to the short sea vessel) these containers are consequently counted twice in the sea port statistics.

So the direct calls of deep sea vessels in Gdansk have a high negative statistical impact (1 40' container = 4 TEU) for the ports which have handled those containers before.







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## Land operation trucks, trains and barges

During the past 50 years in the Hamburg – Le Havre range there were periods with vivid media attention for waiting times at sea terminals. Truck and train seem to have managed their incidental delays at the terminals, but waiting times in combination with barge handling evolved to be a long lasting issue with lower and higher tense periods.

All barges operate in time schedules, like deep sea ships do, but with smaller timeframes (hours instead of days), because they have shorter trips and only incidental hindrances – even with a broken down engine a barge can keep its schedule!

So, when barges have to wait hours or days before unloading/loading not only their schedules are down the tubes, but the connected operation and calculation is as well. Looking back you have to say that this issue got a lot of attention but no solution. Barge operators are facing higher production costs and the in time delivery expected by the shipper can't be realized. Rail and road did not suffer to the same extent as barge operators did and that is not only a pity, it is wasting the common USP's, especially for the ports with a dense and far reaching waterway network in their hinterland backyard.

The terminal operators have a hard job — either compensating delays of the deep sea vessels or handling (un)planned vessels at the highest speed levels of container handling — without a moderate inbetween! This, together with lots of extra complications (e.g. dwell time, blind containers, etc.), does not really contribute to a quick and smooth processing and throughput. Just to make clear that also shippers influence this complex operation. The inevitable "salt" focus with it's daily troubles and extras generates operational limitations at the "sweet" side.

A real challenge for the coming 50 years is combining the core competences of the ports, the terminals and the barge mode in order to get a complete and integrated, perfect working



logistic chain, 24/7 without any delay. This is what the economy (shippers) needs and wants – ports focusing on this extra quality and managing these complex processes will definitely enlarge their attractiveness.

This is what can be read between the lines in the development of the market shares of the different ports in the Hamburg – Le Havre range and of course it would be interesting to extend the compilation of Prof. Dr. Theo Notteboom (page 150-151) with a prognosis of another 15 years. How does it look like in 2029? The proportions of the "footloose" and "bound" volumes on port level certainly will have changed! Which disappearing and new names will be in the top 15 container ports?

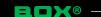
The range of possible solutions for a perfect barge operation is wide and from digital to contractual to physical options (stronger chain involvement, data, floating stacks, partial shop-in-shop, river hub(s), extended river gates, decentralizing land operation, etc.) there are a growing number of ideas, all with different affinities to the deep sea operation, but thanks to

the growing capacities in and around the classic Hamburg – Le Havre range the growing pressure in- and outside presumably may have a catalytic effect.

In the past there was a fast growing market; ports and terminals just managed to get the infra- and suprastructural works more or less-done in time. The situation now is different: too much capacity, thus saturation. In saturated markets other qualities are asked for or perhaps better: only the real qualities count.

#### **Future**

Trades are slowing down or not growing as fast as expected (and needed) and ports have too much capacity. This situation is rather unknown in the field of container ports. The steadily growing capacity (Felixstowe, London, Le Havre, Antwerp, Rotterdam, Wilhelmshaven, Gdansk) generates different kinds of pressure. Those ports who manage to attract both rail frequency and barge diversity and are *taking care* of both, will have the better cards for the next 50 years.



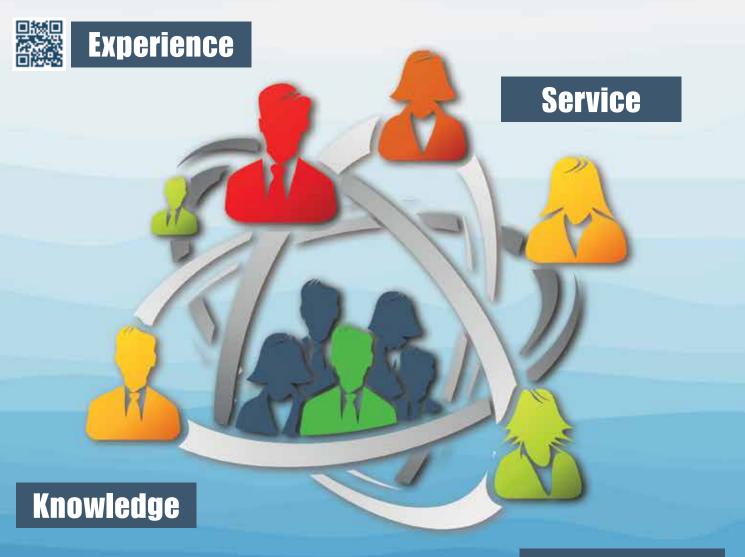


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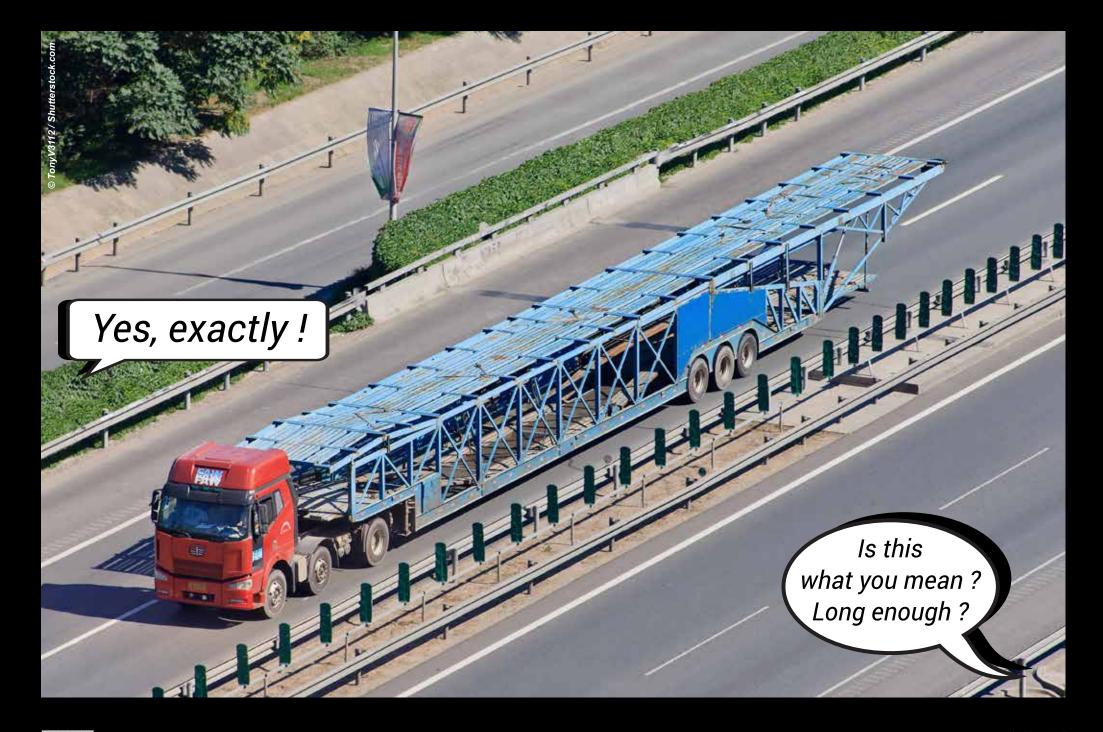
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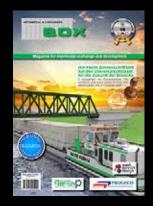




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### **Imprint - Impressum - Colofoon**















ISSN 2215-0277 [Print] ISSN 2452-218X [Pdf]



ISSN 2215-0250 [Print] ISSN 2452-0269 [Pdf]



ISSN 2215-0250 [Print] ISSN 2452-0269 [Pdf]

#### **Editorial director**

Jos W Denis ios.denis@box-intermodal-containers.com **\*\*** +31 6222 31935

#### **Editorial support & maps**

Olaf Grüzmacher Hans-Dieter Hartwich Hans-Peter Hofmann

- Claire Trivett
- Ton van Doorn
- Johan Kijzerwaard

#### **Events**

Frans Kamp Albert Vis

#### Photography & illustrations

Nick Brennan Markus Liermann Frank Bachmann Jan Oosterboer

- Fran Brennan Martina Nolte
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  - Hans Snel

#### **Design & website**

Arie W. Jonkman

Rob de Winter Eugène Eijdems

- Bastian Bergner
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#### **Subscription support**

info@box-intermodal-containers.com

#### Columns & articles

- Leo Adank
- Livio Ambrogio
- Thore Arendt
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