

**2012** Report on

# Combined Transport in Europe

December 2012



INTERNATIONAL UNION  
OF RAILWAYS

ISBN 978-2-7461-2130-0

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# Foreword by the UIC Combined Transport Group Chairman

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The Combined Transport Group (GTC) of the UIC is pleased to present the fourth edition of the Report on Combined Transport which is published every other year since 2006.

A few years ago, keen to report on the developments of combined transport (CT), the GTC undertook to consolidate the key facts relative to its business: market structures, time series of statistical data, description of the business models in place, the contribution of the sector to the overall economy, emerging markets etc. and turn them into the first comprehensive report on combined transport. This trend initiated in 2006 is continuing to provide striking evidence of the dynamism of this market segment which witnesses an average annual growth rate of over 7%.

The wealth of information contained in the Combined Transport Reports is available thanks to KombiConsult from whom they were commissioned.

The information is gathered from public statistics, company information, market knowledge but also through extensive interviews of CT stakeholders carried out by KombiConsult.

This edition of the Report which focuses on the year 2011, pays special attention to recent highlights and trends in the CT industry:

- changes of the market structure
- changes in business models
- special insight into the seaborne throughput of European container ports
- assessment of rail's share of maritime traffic also known as container hinterland traffic.

I am sure the reader will find this 4<sup>th</sup> edition even more interesting as the previous ones.

A handwritten signature in black ink, appearing to read 'Eric Lambert'.

Eric Lambert



# 1. Unaccompanied combined rail/road transport volumes

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## 1.1. Methodological remarks

### Data

**The reference year for the Report is 2011.** The starting point of the Report was to estimate the number of companies who had supplied unaccompanied CT services in Europe in the reference year.

135 providers of unaccompanied CT services were identified. They were all active companies in 2011 even if some subsequently disappeared through mergers and acquisition.

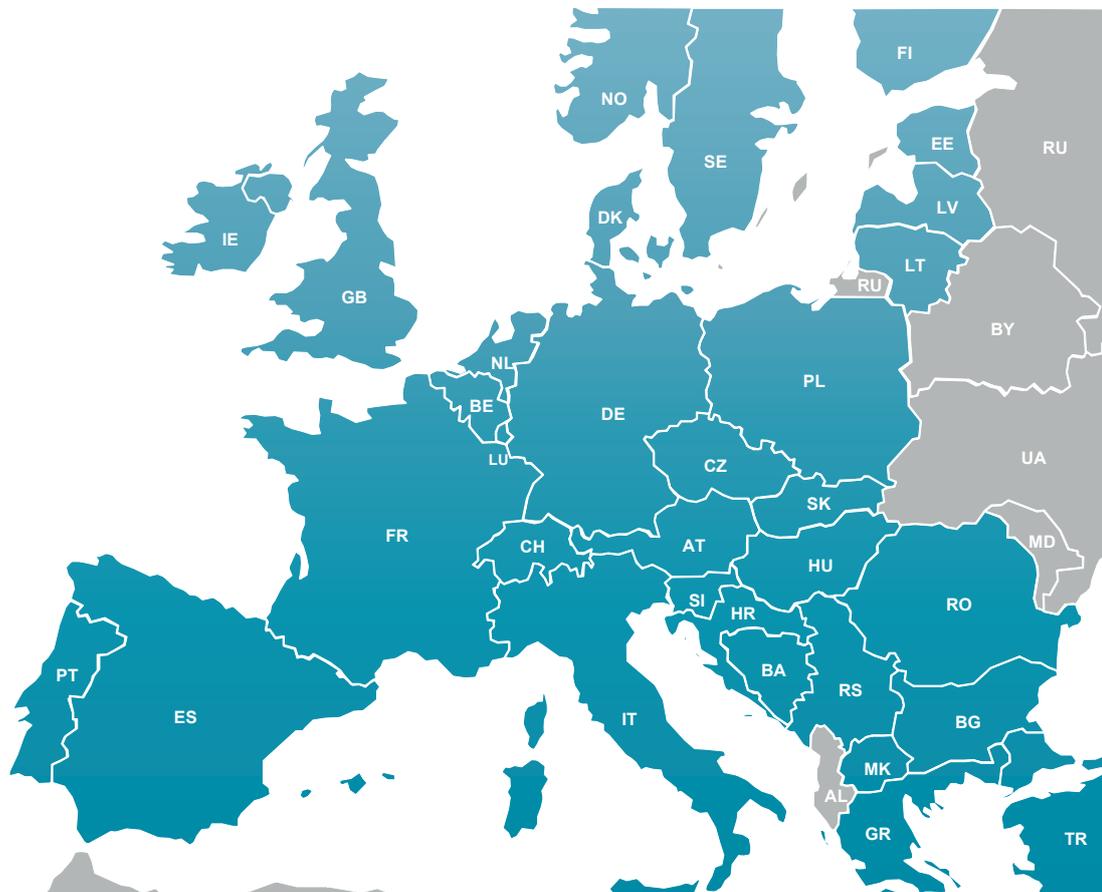
Every company was invited to participate in the survey and was emailed a questionnaire. The response rate was close to 70 per cent. According to our estimation, the respondents represent approximately 80 to 85 per cent of the entire CT market in terms of volumes moved. The market coverage was further improved by analysing additional sources such as:

- The UIRR statistics
- National offices for statistics
- KombiConsult's data base.

In order to ensure coherence with previous Reports, to avoid double counts and to overcome missing data sets, the methodology used was the same as for the previous Reports. This leads us to state that over 95% of the European combined rail/road transport volumes were accounted for.

### Geographical coverage

As concerns the geographic scope the survey includes the domestic and international CT of all EU Member States - if any -, Norway, Switzerland, Croatia, Turkey as well as at least the international shipments between these countries and Bosnia, Serbia, Macedonia, and the Ukraine (see Figure 1-1 overleaf).

**Figure 1-1: Countries covered by 2012 survey**

Source: KombiConsult

### Market segmentation and definition

There are two main business areas, which vary in almost every respect:

- the origin and destination of the cargo moved
- the equipment used
- the scope of logistical services supplied by CT companies

(see also sections 4.2 and 4.3):

- **Continental CT** is the transport of goods, which are sourced in and bound for a location within Europe, in intermodal loading units. This segment also accounts for short-sea transport between the European mainland and the U.K. and Ireland. For the movement of continental freight customers overwhelmingly employ “European” equipment, loading units that could only be used by land transport modes, ferries, and, eventually, short-sea vessels. These are domestic freight containers, swap bodies, and semi-trailers. The scope of logistical services offered by CT service providers in this business is used to include only the terminal-to-terminal transport.

- **Maritime CT or container hinterland CT** is the transport of marine containers between seaports and inland locations in Europe. The containers almost exclusively carry trans-continental cargo, goods with origin or destination in overseas. In maritime CT services virtually only 8' wide containers conforming to the ISO standards with a length of 20', 40', or 45' are deployed. Other than in continental CT intermodal service providers usually supply a full port-to-door service package to their clients, including pre- or final road haulage, customs clearance, and empty container depot services.

The second segmentation of CT services is geographical distinguishing domestic and international CT. This survey is set to conform to the methodology of national and other statistics and applies a strictly territorial principle. **Domestic CT** is when a CT loading unit is conveyed on a national service between two terminals located in a single country independent from whether the final origin and/or destination of the goods is in this country. The movement of a shipment on a CT service between two locations in separate countries is defined as **international CT**.

## 1.2. Unaccompanied combined transport volumes 2011 v 2009

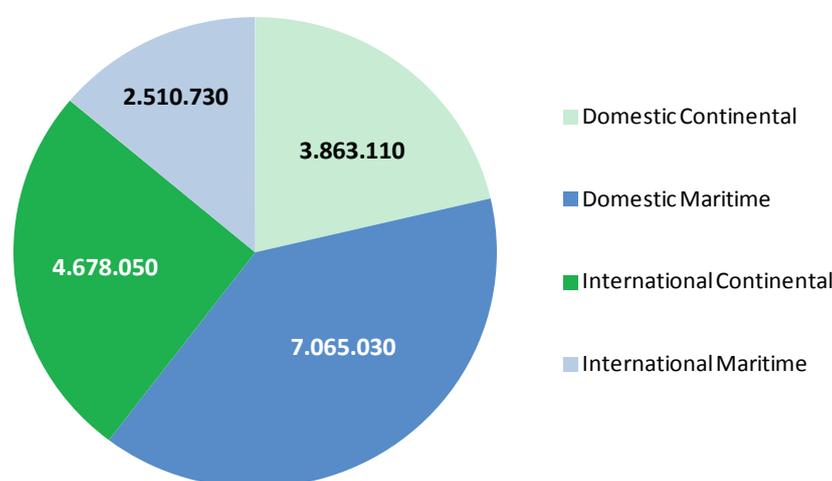
In the year 2011, the stakeholders of European unaccompanied CT achieved a new all-time high transport volume. Altogether they carried a **total of 18,116,920 TEU** on domestic and international CT services. This is an increase of 16.3% compared to the year 2009 when the volume had dropped to 15,575,150 TEU. It shows that CT in Europe has not only recovered from the decline of demand, impacted by the global economic and financial crisis, but even exceeded the previous record, achieved in 2007 (see Figures 1-2 and 1-4 and also section 1.3).

**Domestic CT** accounted for 10,928,140 TEU in 2011 corresponding to a market share of 60.4% of the total CT volume. This is only slightly less than in 2009 when its proportion was 60.7%. In that year national CT services conveyed 9,451,870 TEU. This means that the volume has grown by 15.6% in the period to 2011 (see Figures 1-2, 1-3 and 1-4). Maritime transport continues to clearly dominate domestic CT accounting for 64.6% of this sector, leaving 35.4% for continental services.

The ratio between these two market segments is almost reversed in **international CT**: Continental shipments have a share of 65.1%, the maritime CT 34.9%. The total volume of international CT improved by a more than proportionate growth rate of 17.4% from 6,123,280 TEU (2009) to 7,188,780 TEU (2011). Consequently, its market share of total unaccompanied CT in Europe rose marginally to 39.6% (see Figures 1-2, 1-3 and 1-4).

**Figure 1-2: Unaccompanied CT by market segment: TEU carried 2011**

CT market segment	Continental	Maritime	Total
	(TEU)		
Domestic CT	3.863.110	7.065.030	10.928.140
International CT	4.678.050	2.510.730	7.188.780
<b>Total CT</b>	<b>8.541.160</b>	<b>9.575.760</b>	<b>18.116.920</b>



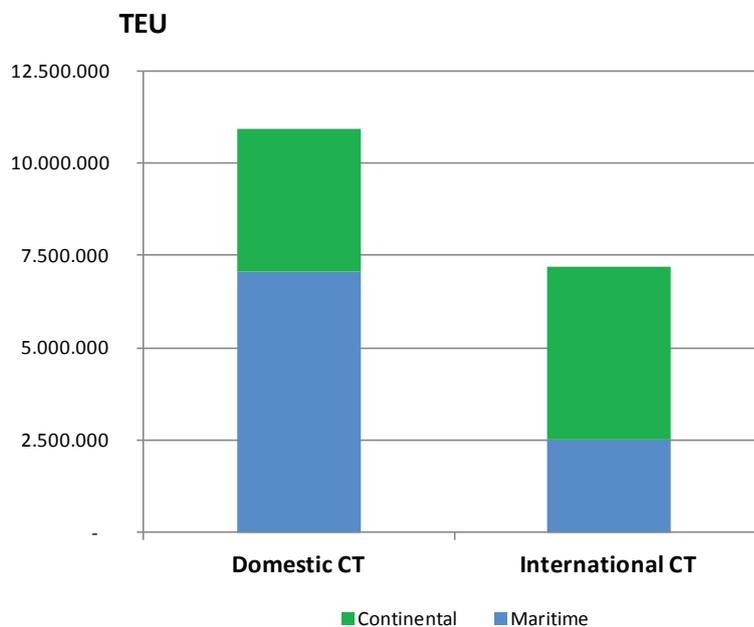
Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

CT service providers in Europe shipped 9,575,760 TEU in **maritime CT** in the reporting period. This market segment continues to keep its leading position with a share of 53.9% but lost three percentage-points against 2009. This also reflects the less than average growth rate of this sector. Based on the 2009 volume of 8.858 million TEU, maritime traffic by rail only increased by 8.1%, that is about half of the progress of the entire industry (see Figures 1-2 and 1-4).

In contrast to that, **continental CT** services soared and reached a growth rate of 27.1% between 2009 and 2011. In the reporting period continental trains carried 8.541.160 TEU against the previous volume of about 6.718 million TEU (see Figures 1-2 and 1-4).

In 2011 - like in all other years, for which we have carried out a survey - the largest market segment was the domestic maritime CT. With nearly 7.1 million TEU it stands for 39% of the total volume. However, the market share considerably declined from the 2009 result of 41.4%. International maritime CT, the smallest segment delivering a volume of 2.5 million TEU, lost market share. It decreased from 15.5% to 13.9%. The winners were the continental sectors, which both improved their market share by two percentage-points. International continental CT, the second biggest market segment accounting for 4.7 million TEU, has now a proportion of 25.8% of the entire CT market volume while domestic continental CT services (3.9 million TEU) have a share of 21.3% (see Figures 1-2 and 1-3).

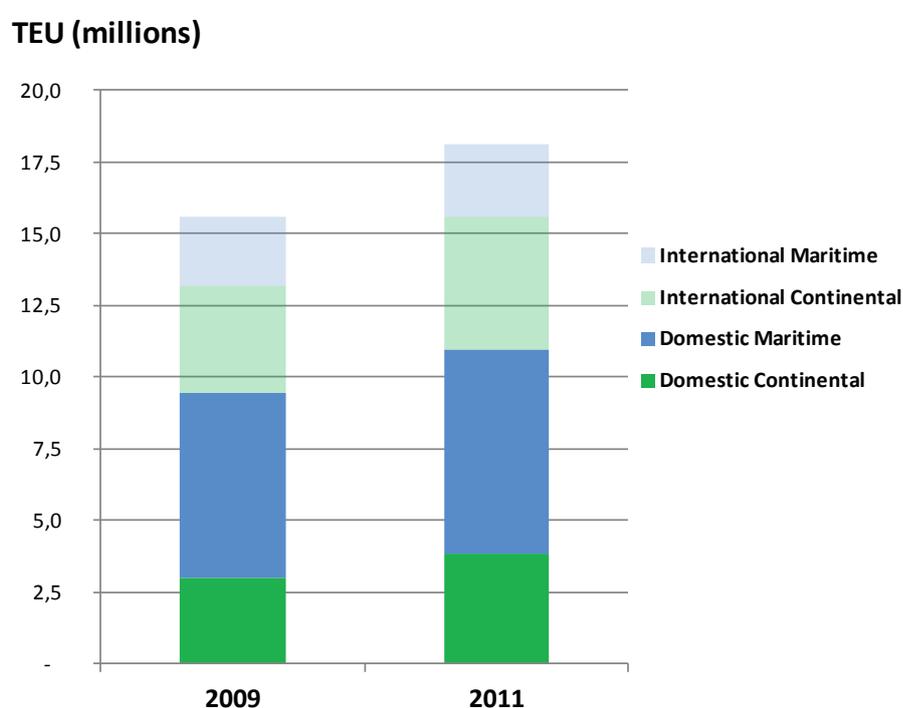
**Figure 1-3: Unaccompanied domestic and international CT: TEU carried 2011**



Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

**Figure 1-4: Unaccompanied CT by market segment: TEU carried 2009/2011**

CT market segment	Continental		Maritime		Total		
	2009	2011	2009	2011	2009	2011	2011/2009
Domestic CT	3,010	3,863	6,442	7,065	9,452	10,928	15,6%
International CT	3,708	4,678	2,416	2,511	6,124	7,189	17,4%
<b>Total CT</b>	<b>6,718</b>	<b>8,541</b>	<b>8,858</b>	<b>9,576</b>	<b>15,576</b>	<b>18,117</b>	<b>16,3%</b>



Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

The volume of unaccompanied CT in Europe in terms of tonnage of goods moved also climbed to a new record in the year 2011. From 164,652,150 gross tonnes in 2009 it increased by almost 30 million tonnes or 16.5% to a **total of 191,842,030 gross tonnes** in the reporting period (see Figures 1-5 and 1-7). It should be noted that gross tonnes include the weight of goods shipped and the tare weight of the intermodal loading units employed.

**Domestic CT** accounts for 60% of the total volume thus almost the same market share as recorded for the throughput measured in TEU. The trains on domestic routes conveyed 115,053,570 tonnes. This is an increase of 13.2% compared to 2009 (101,622,350 tonnes). It's typical that this growth rate is lower than for TEU since the maritime traffic, which dominates the domestic CT, is used to have a smaller average weight per TEU than continental CT (see Figures 1-5, 1-6 and 1-7).

The powerful expansion of **international CT** in recent years particularly as concerns continental services is reflected by the strong growth of the tonnage in this sector. The volume rose by 21.8% from 63,029,800 tonnes (2009) to 76,788,460 tonnes (2011). As a result the market share of cross-border CT substantially enhanced from 38.3% to 40% (see Figures 1-5, 1-6 and 1-7).

Owing to the enormous growth of international shipments the total volume of goods moved on continental CT services for the first time ever has exceeded the tonnage of maritime CT. In 2011, the **continental CT** amounted to 97,310,130 tonnes corresponding to an increase of 28.2% against the 2009 volume of about 76.0 million tonnes. This sector now represents 50.8% of the total market compared to 46.2% two years earlier. In contrast to that, **maritime CT** tonnages only rose by 6.5% from 88.6 million tonnes to 94,471,900 tonnes (see Figures 1-5 and 1-7).

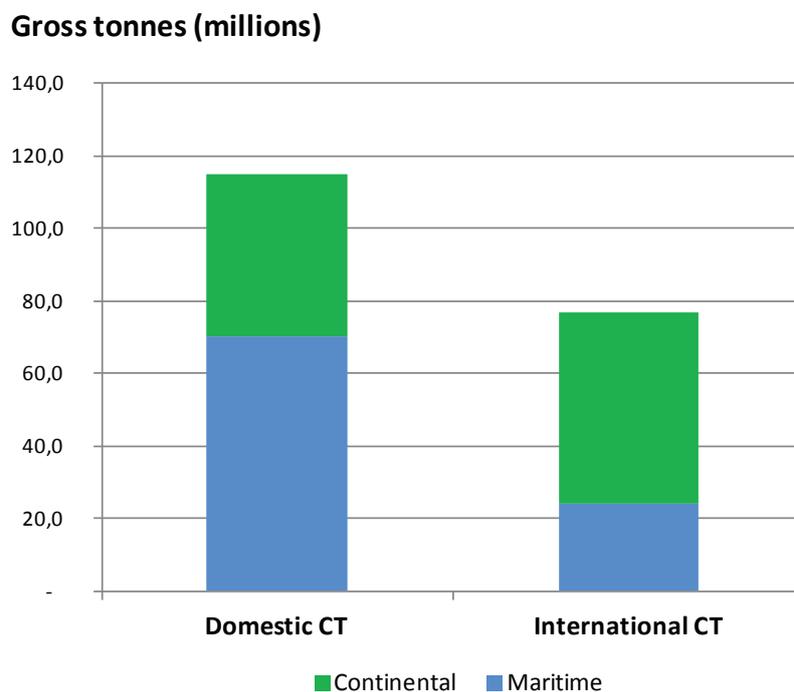
Despite that, also with respect to the goods moved, the domestic maritime CT remains the biggest intermodal sector accounting for 36.6% of the total tonnage. But this is a decrease of three percentage-points compared to 2009 while both continental CT market segments seem to catch up with great speed. The continental volume shipped on international trade lanes has already achieved a share of 27.3% in 2011, and domestic continental CT closely follows with 23.4%. Far behind ranks the international maritime CT whose market share has fallen to 12.7% in 2011.

*Figure 1-5: Unaccompanied CT by market segment: goods moved 2011*

CT market segment	Continental	Maritime	Total
	(gross tonnes)		
Domestic CT	44.922.400	70.131.170	115.053.570
International CT	52.447.730	24.340.730	76.788.460
<b>Total CT</b>	<b>97.370.130</b>	<b>94.471.900</b>	<b>191.842.030</b>

Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

Figure 1-6: Unaccompanied domestic and international CT: goods moved 2011



Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

Figure 1-7: Unaccompanied CT by market segment: goods moved 2009/2011

CT market segment	Continental		Maritime		Total		
	2009	2011	2009	2011	2009	2011	2011/2009
Domestic CT	36,2	44,9	65,4	70,1	101,6	115,0	13,2%
International CT	39,8	52,5	23,2	24,3	63,0	76,8	21,9%
<b>Total CT</b>	<b>76,0</b>	<b>97,4</b>	<b>88,6</b>	<b>94,4</b>	<b>164,6</b>	<b>191,8</b>	<b>16,5%</b>

Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

**Figure 1-8: Domestic unaccompanied CT by country: TEU and goods shipped 2009/2011**

Country	TEU		% change 2011/2009	Gross tonnes		% change 2011/2009
	2009	2011		2009	2011	
Germany	2.554.000	3.268.000	28,0%	25.368.000	32.262.000	27,2%
United Kingdom	1.340.850	1.530.000	14,1%	20.570.000	23.340.000	13,5%
Italy	918.910	1.225.430	33,4%	9.753.700	9.710.460	-0,4%
Sweden	764.000	837.460	9,6%	6.500.000	7.169.000	10,3%
Belgium	543.910	614.380	13,0%	7.760.400	7.153.430	-7,8%
France	591.730	606.670	2,5%	4.537.500	4.668.700	2,9%
Spain	323.970	479.940	48,1%	4.098.150	4.560.820	11,3%
Norway	515.360	386.000	-25,1%	5.411.000	4.207.400	-22,2%
Austria	468.210	376.930	-19,5%	4.596.400	4.738.180	3,1%
Netherlands	335.000	339.300	1,3%	3.551.000	3.538.000	-0,4%
Switzerland	440.000	284.440	-35,4%	3.130.000	3.595.480	14,9%
Romania	131.690	246.150	86,9%	1.602.000	2.999.180	87,2%
Portugal	157.700	225.960	43,3%	1.509.000	2.667.800	76,8%
Poland	70.790	166.490	135,2%	528.300	1.389.700	163,1%
Czech Republic	98.370	155.170	57,7%	1.145.000	1.396.520	22,0%
Slovenia	67.220	65.610	-2,4%	360.400	492.060	36,5%
Finland	109.000	60.000	-45,0%	981.000	525.000	-46,5%
Ireland	6.000	25.000	316,7%	70.000	300.000	328,6%
Slovakia	8.060	19.330	139,8%	73.850	151.340	104,9%
Croatia	1.800	14.480	704,4%	20.000	157.100	685,5%
Hungary	2.990	960	-67,9%	12.750	24.000	88,2%
Bulgaria	2.310	270	-88,3%	43.900	5.000	-88,6%
Estonia	-	170	/	-	2.400	/
<b>Total</b>	<b>9.451.870</b>	<b>10.928.140</b>	<b>15,6%</b>	<b>101.622.350</b>	<b>115.053.570</b>	<b>13,2%</b>

Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics, partly estimates

Figure 1-8 presents the **domestic unaccompanied CT of European countries**, in which volumes have been recorded in the years 2009 and 2011 respectively. In both periods, domestic CT in **Germany** has achieved the largest volume of all countries. With almost 3.3 million TEU, in 2011, Germany accounts for 30% of the aggregate European domestic CT cargo. From 2009 to 2011 the number of TEU carried on national services rose by 28.0%. Even if this is considerably more than the average growth rate of 15.6% it must be taken into account that, in 2009, volumes sharply dropped from a 2008 record turnover. On the other hand the 2011 domestic volume represents an all-time high in Germany.

In **Italy**, who ranks third among European countries, the volume carried on domestic CT services strongly declined by 40% from 2007 to 2009 and has now partly recovered to some 1.2 million TEU.

In the **United Kingdom** more than 1.5 million TEU were transported in the reporting period. An increase of “only” 14.1% against 2009 seems to be comparatively low but in contrast to almost any mainland country, the CT operations in the UK didn’t suffer from a downturn in 2009. Instead the British CT industry has delivered a rather continuous path of growth since about a decade (see also section 1.3).

The three countries above are the only ones, in which the domestic CT volume exceeded the threshold of one million TEU, in 2011. In Sweden, Belgium, and France CT service providers carried more than half a million TEU in the same period. The top six countries together represent nearly 75% of the total domestic CT volume in Europe.

The **European network of international CT services** is becoming increasingly more close-meshed. The 2012 survey has revealed that, in 2011, CT shipments have been moved on at least 126 international country-country trade lanes. This remarkable extent of the demand of users for CT services, however, must not mislead the industry that a large part of the volume continues to be concentrated on a few corridors. In fact 78% of the entire amount of international CT shipments and cargo are shipped on the top 20 trade lanes. They represent 5.6 million TEU or 60 million gross tonnes respectively (see Figure 1-9). The full O-D matrix is attached in Annex 2.

In 2009, Germany-Italy via Austria had become the largest single international trade lane for the first time ever.

With an aggregate volume of 673.000 TEU it has stood ground in 2011. But while the margin against the trade lane German-Italy via Switzerland was very small in the previous survey it has now increased to about 100,000 TEU. This is resulting from two developments. First, “incumbent” CT operators have reinforced existing services or launched additional ones over the Brenner corridor, which is the core route of this trade lane. Second, the interest in using the Tauern pass, the other major transit route through Austria, which – if anything - had been “neglected” by CT service providers, has grown lately. It particularly seems to become a major corridor for goods from/to Turkey, which land or leave by ferry at the port of Trieste.

Accounting for nearly the same transport volume the trade lanes Belgium-Italy and Germany-Italy both via Switzerland share the second place. Here CT companies conveyed 569.000 TEU and 565.000 TEU respectively. Both trade lanes depend significantly more on the chemical industry than the Austrian routes, which have a much more balanced goods structure. Owing to the economic recession in Italy the demand of the Italian industry for basic materials such as chemicals, sharply declined in the first half of 2011. When additionally freight traffic grew increasingly imbalanced, price competition led to a drop of the market rates. Considering these unfavourable market conditions, CT services in transit through Switzerland performed fairly well in the reporting period.

Figure 1-9: Top 20 trade lanes of unaccompanied international CT: TEU and goods shipped 2011

Trade lane		TEU	Tonnes
Germany -	Italy via AT	673.000	8.394.000
Belgium -	Italy via CH	569.000	7.201.000
Germany -	Italy via CH	565.000	6.804.000
Germany -	Czech Republic	492.000	4.330.000
Germany -	Netherlands	470.000	4.771.000
Germany -	Austria	447.000	4.782.000
Netherlands -	Italy via CH	266.000	3.080.000
Germany -	Switzerland	256.000	2.230.000
Belgium -	Germany	205.000	2.156.000
France -	Italy	201.000	2.393.000
Sweden -	Germany	193.000	2.576.000
Germany -	Poland	169.000	1.350.000
Poland -	CIS States	165.000	1.353.000
Belgium -	France	164.000	1.748.000
Hungary -	Slovenia	142.000	1.131.000
Slovakia -	Slovenia	134.000	856.000
Germany -	Hungary	128.000	1.355.000
Germany -	Spain	113.000	1.294.000
Luxemburg -	France	110.000	1.104.000
Netherlands -	Czech Republic	96.000	517.000

Source: KombiConsult analysis, CT service providers, UIRR, partly estimates

The high dependency of European CT on goods travelling on transalpine trains from and to Italy becomes obvious if, in addition to the top three trade lanes, further routes are taken into account, such as the corridors with the Netherlands via Switzerland and with France. The aggregated volume of these five trade lanes amounts to nearly 2.3 million TEU corresponding to more than 30% of all international CT shipments.

With the exception of Netherlands-Italy and Germany-Italy via Austria, which see some thousand marine containers, the transalpine CT services with Italy move close to 100% continental cargo. The trade lanes between Germany, on the one side, and the Czech Republic and the Netherlands, on the other side, are however dominated by maritime traffic. The survey has recorded a volume of about 492,000 TEU and 470,000 TEU respectively. It is estimated that in each case some 90% of the total volume can be attributed to marine containers. On the trade lane Netherlands-Germany, Rotterdam is basically the unique location on the Dutch side with a number of origins and destinations in Germany, particularly along the Rhine valley. The maritime CT between Germany and the Czech Republic is performed between the ports of Hamburg and Bremerhaven and the greater Praha area, whereas the continental services also extend to Duisburg (DE) and Ostrava (CZ).

### 1.3. Time series of unaccompanied combined transport until 2011

In 2011, the European CT industry as a whole was able to recover from the 2009 worldwide economic downturn. The year 2011 brought a new all-time high volume for unaccompanied CT. The CT service providers have clearly beaten the previous record from the year 2007. In 2011, they conveyed 18.1 million TEU, which were 740,000 TEU (+4.2%) more than four years earlier (see Figure 1-10).

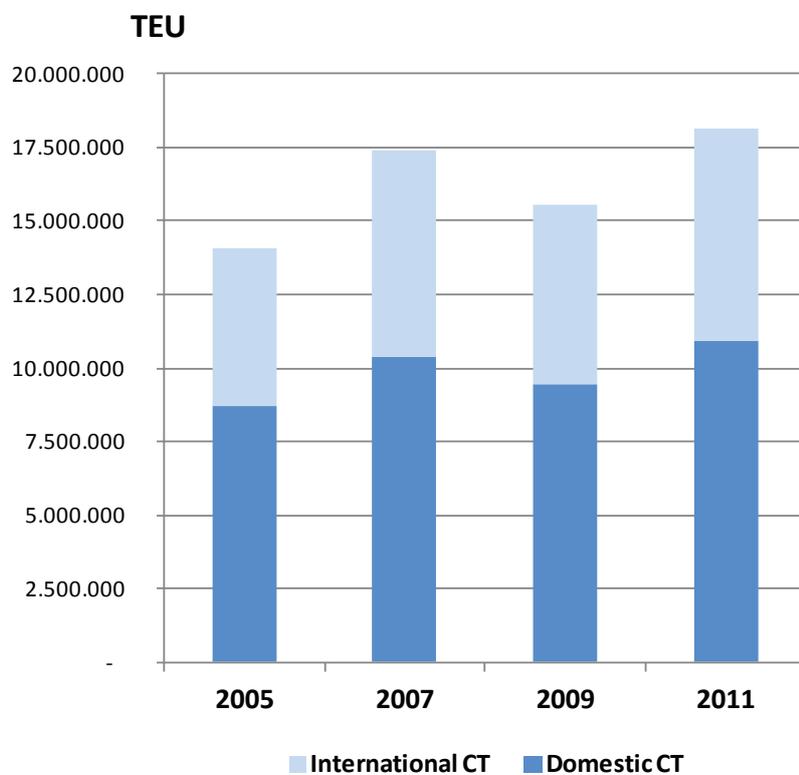
Compared to 2005 when the first report was issued, the total unaccompanied volume rose by 28.6% in the period to 2011. On cross-border services the amount of shipments improved by 33.6% from 5.4 to 7.2 million TEU while the total domestic volume increased by 25.5%, from 8.7 to 10.9 million TEU. As a result, the market share of domestic CT decreased by 1.5 percentage-points from 61.8% to 60.3% in this period (see Figure 1-10).

Identical conclusions can be drawn from an analysis of the time-series of unaccompanied CT measured in gross tonnes. Compared to 2007, in the reporting period 2011, the volume of cargo moved increased by 5.7% to almost 192 million tonnes. The growth rate for the period 2005 to 2011 amounts to 31.8%.

Within six years CT service providers succeeded to shift an additional 46 million tonnes towards rail. The data base also shows that international CT has grown considerably stronger than domestic CT with 43.2% compared to 25.1%. This can be attributed to: domestic CT, being dominated by maritime CT, cross-border services, the stronghold of continental shipments, tend to have higher gross weights than marine containers because of the nature of the goods transported and the tare weight of the loading units deployed on continental services (see Figure 1-11).

Figure 1-10: Unaccompanied CT: TEU carried 2005-2011

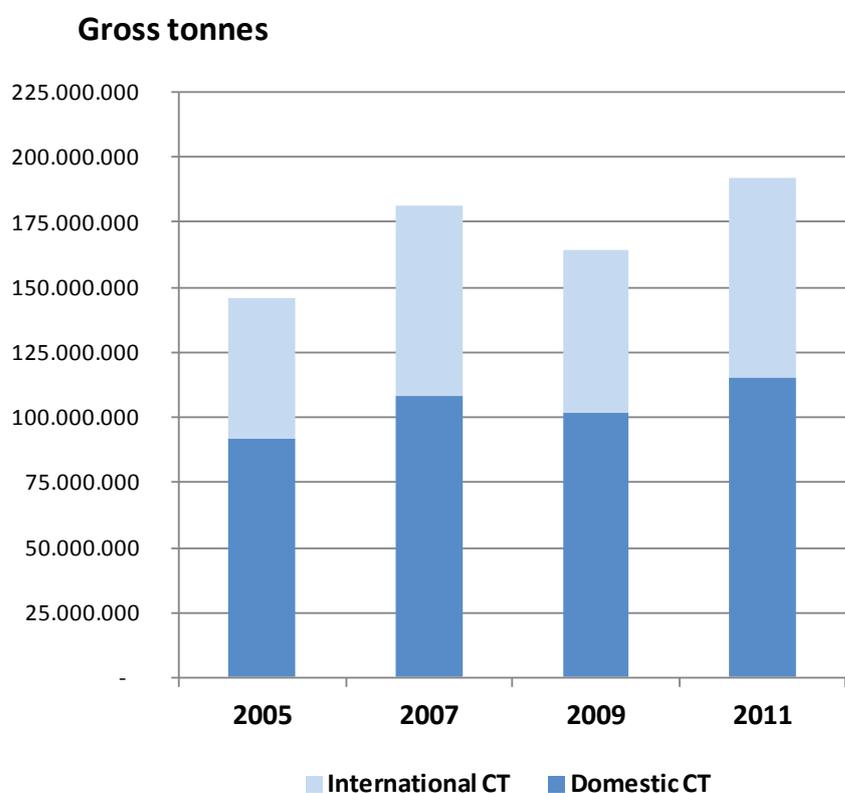
CT market segment	TEU				% change 2011/2005
	2005	2007	2009	2011	
Domestic CT	8.708.170	10.367.810	9.451.870	10.928.140	25,5%
International CT	5.378.880	7.007.250	6.123.280	7.188.780	33,6%
<b>Total CT</b>	<b>14.087.050</b>	<b>17.375.060</b>	<b>15.575.150</b>	<b>18.116.920</b>	<b>28,6%</b>



Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

Figure 1-11: Unaccompanied CT: goods moved 2005-2011

CT market segment	Gross tonnes				% change 2011/2005
	2005	2007	2009	2011	
Domestic CT	91.939.600	107.906.400	101.622.350	115.053.570	25,1%
International CT	53.614.000	73.590.960	63.029.800	76.788.460	43,2%
<b>Total CT</b>	<b>145.553.600</b>	<b>181.497.360</b>	<b>164.652.150</b>	<b>191.842.030</b>	<b>31,8%</b>



Source: KombiConsult analysis, CT service providers, UIRR, national offices for statistics

In the period from 2005 to 2011 the **evolution of domestic CT in Europe** has varied extremely from country to country (see Figure 1-12 and Figure 1-13). In terms of TEU (see Figure 1-12), there are just a few high-volume countries - Belgium, Germany, and the UK - in which domestic CT has grown at rates significantly above the European average of 28.6%. Particularly the latter two also have essentially contributed to the overall absolute increase of this CT sector.

While the volume of national services in Spain and Sweden have grown according to the European average many other countries, which – like Spain and Sweden - had provided for a fairly “mature” CT system in 2005, has fallen back in 2011 to the levels of 2005 or only increased slightly. This applies, for example, to Austria, France, Norway, or Romania. The providers of domestic services in Finland, Italy and Switzerland are even confronted with a backlash of their systems. In 2011, they carried less TEU than six years earlier.

The Netherlands and Portugal, two countries with medium-high TEU volumes in 2005, have recorded a very gratifying development since. The number of domestic shipments rose by some 50% by the year 2011.

Starting from a rather low level domestic CT in the Czech Republic, Slovakia and Slovenia has soared lately. These are countries with comparatively short transport distances like Belgium or the Netherlands, on which CT services must struggle hard to be competitive with road. So the question immediately arises whether these domestic volumes and the underlying services will be sustainable.

According to the results of the 2012 survey, the volumes moved by domestic trains in the Czech and Slovakian Republics virtually only comprise of gateway shipments (units which prior to or after the domestic journey are carried on an international train). These combined national/international CT services can economically compete with trucks since the pressure on freight rates – though intense like everywhere – is a bit less severe particularly if they concern marine containers on hinterland services as it is the case.

The situation of Slovenian domestic CT is different. It only relates to maritime transport over very short distances of about 100 kilometres between the port of Koper and inland locations. The competitiveness of rail against trucks clearly is based on the economies of scale of the services, which result from two characteristics - very high and extremely bundled point-to-point container flows.

In addition to the countries whose domestic CT shipments have been entered into the overall record of unaccompanied CT so far, the following tables (see Figure 1-12 and Figure 1-13) also include the domestic CT of Turkey in the year 2011 accounting for 458.000 TEU and 6.9 million tonnes respectively. As reliable statistical data for other years were not available and to avoid a bias, these volume haven't been taken into account for the 2011 analysis of unaccompanied CT in Europe.

Figure 1-12: Domestic unaccompanied CT by country: TEU carried 2005-2011

Country	TEU				% change 2011/2005
	2005	2007	2009	2011	
Austria	361.200	551.870	468.210	376.930	4,4%
Belgium	428.200	601.000	543.910	614.380	43,5%
Bulgaria	n.a.	2.300	2.310	270	/
Croatia	1.020	2.100	1.800	14.480	1319,6%
Czech Republic	66.450	76.000	98.370	155.170	133,5%
Denmark	2.420	2.530	n.a.	n.a.	/
Estonia	-	-	-	170	/
Finland	247.000	91.570	109.000	60.000	-75,7%
France	560.000	592.000	591.730	606.670	8,3%
Germany	1.958.000	2.699.000	2.554.000	3.268.000	66,9%
Greece	n.a.	n.a.	n.a.	n.a.	/
Hungary	23.560	15.320	2.990	960	-95,9%
Ireland	-	-	6.000	25.000	-
Italy	1.432.000	1.575.000	918.910	1.225.430	-14,4%
Latvia	n.a.	n.a.	-	-	/
Lithuania	-	-	-	-	/
Luxemburg	-	-	-	-	/
Netherlands	223.000	334.000	335.000	339.300	52,2%
Norway	370.000	425.000	515.360	386.000	4,3%
Poland	153.000	80.060	70.790	166.490	8,8%
Portugal	150.000	168.300	157.700	225.960	50,6%
Romania	217.000	247.500	131.690	246.150	13,4%
Serbia	n.a.	n.a.	n.a.	n.a.	/
Slovakia	2.920	5.560	8.060	19.330	562,0%
Slovenia	24.800	44.500	67.220	65.610	164,6%
Spain	380.500	412.500	323.970	479.940	26,1%
Sweden	644.100	711.400	764.000	837.460	30,0%
Switzerland	446.000	458.300	440.000	284.440	-36,2%
Turkey	n.a.	n.a.	n.a.	458.870	/
United Kingdom	1.017.000	1.272.000	1.340.850	1.530.000	50,4%
<b>Total Domestic CT</b>	<b>8.708.170</b>	<b>10.367.810</b>	<b>9.451.870</b>	<b>11.387.010</b>	<b>30,8%</b>

n.a. = not available

- = 0

/ = not possible

Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics, partly estimates

Figure 1-13: Domestic unaccompanied CT by country: goods moved 2005-2011

Country	Gross tonnes				% change 2011/2005
	2005	2007	2009	2011	
Austria	3.120.000	4.893.100	4.596.400	4.738.180	51,9%
Belgium	4.429.000	5.860.000	7.760.400	7.153.430	61,5%
Bulgaria	n.a.	34.300	43.900	5.000	/
Croatia	11.000	23.100	20.000	157.100	1328,2%
Czech Republic	465.000	913.000	1.145.000	1.396.520	200,3%
Denmark	26.100	26.800	n.a.	n.a.	/
Estonia	-	-	-	2.400	/
Finland	2.569.000	656.800	981.000	525.000	-79,6%
France	5.637.000	4.924.000	4.537.500	4.668.700	-17,2%
Germany	18.677.000	26.665.000	25.368.000	32.262.000	72,7%
Greece	n.a.	n.a.	n.a.	-	/
Hungary	107.500	50.100	12.750	24.000	-77,7%
Ireland	-	-	70.000	300.000	-
Italy	13.197.000	15.281.000	9.753.700	9.710.460	-26,4%
Latvia	n.a.	n.a.	-	-	/
Lithuania	-	-	-	-	/
Luxemburg	-	-	-	-	/
Netherlands	2.450.000	3.540.400	3.551.000	3.538.000	44,4%
Norway	3.885.000	4.462.000	5.411.000	4.207.400	8,3%
Poland	1.310.000	669.700	528.300	1.389.700	6,1%
Portugal	1.545.000	1.703.300	1.509.000	2.667.800	72,7%
Romania	3.805.000	2.966.000	1.602.000	2.999.180	-21,2%
Serbia	n.a.	n.a.	n.a.	n.a.	/
Slovakia	28.000	44.100	73.850	151.340	440,5%
Slovenia	149.000	348.700	360.400	492.060	230,2%
Spain	4.832.000	5.218.000	4.098.150	4.560.820	-5,6%
Sweden	5.475.000	6.047.000	6.500.000	7.169.000	30,9%
Switzerland	3.122.000	3.180.000	3.130.000	3.595.480	15,2%
Turkey	n.a.	n.a.	n.a.	6.861.900	/
United Kingdom	17.100.000	20.400.000	20.570.000	23.340.000	36,5%
<b>Total Domestic CT</b>	<b>91.939.600</b>	<b>107.906.400</b>	<b>101.622.350</b>	<b>121.915.470</b>	<b>32,6%</b>

n.a. = not available

- = 0

/ = not possible

Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics, partly estimates

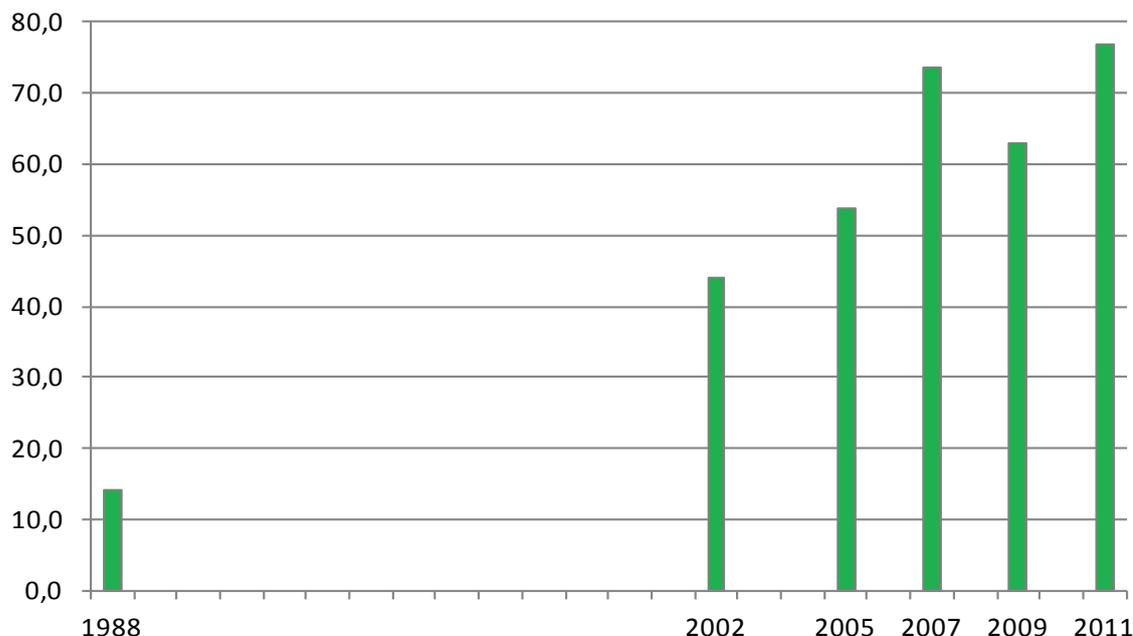
Prior to UIC’s reports on Combined Transport in Europe (published in 2006, 2008, 2010 and 2012) and “Study on Capacity Reserve”(http://uic.org/spip.php?article2150) of 2002, the only survey on combined transport was the AT Kearney study from 1988.

The information from the AT Kearney report together with UIRR statistics, allowed for an initial fragmented time series of international unaccompanied CT to be established.

It clearly appears that between 1988 and 2011, this market segment has grown tremendously rising from proximately 14 million to 77 million gross tonnes annually. This corresponds to a growth of about 450% (see Figure 1-14).

*Figure 1-14: Goods moved in international unaccompanied CT since 1988*

**Gross tonnes (millions)**



Source: KombiConsult database, AT Kearney (1989)

## 2. Accompanied combined rail/road transport volumes

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### 2.1. Size of market and statistical sources

The 2012 survey on European CT has identified the following six companies supplying accompanied CT services in Europe in 2011:

- Adria Kombi
- Alpe Adria
- Hungarokombi
- Ökombi
- RAlpin
- VIA Autoroute Ferroviaire Alpine

Every company except for VIA Autoroute Ferroviaire Alpine (VIA-AFA) has operated “conventional” accompanied services known under the trademarks “rolling motorway” or “rolling highway”. The service providers employ shuttle sets of short-coupled low-bed wagons. Lorry drivers move their road vehicles on the train from one end at the departure terminal and, at the arrival station, leave the train on the other end. Statistical data was provided by these operators as well as by UIRR.

VIA-AFA was the first operator applying the Modalohr technology featuring a horizontal side-loading system both of road vehicles and semi-trailers. The experimental service is performed on a short transport distance between Aiton, France, and Orbassano, Italy, on the Modane corridor. The company is shipping both accompanied and unaccompanied vehicles. Based on the indications published on the website 30 per cent of the total volume was allocated to accompanied services.

### 2.2. Accompanied combined transport volumes 2011 v 2009

The six providers of accompanied CT services conveyed 433,550 road vehicles in the year 2011. Based on an average ratio of 2.33 TEU per truck a total volume of 1,010,180 TEU can be calculated. Compared to the 2009 volume of 1,021,930 TEU this means a minor decrease of 1.1%. A slightly higher reduction has been recorded for the tonnage moved. It fell 1.6% from 15,116,900 to 14,870,000 gross tonnes. The average gross weight per road vehicle carried remained fairly constant in the reporting period. It amounted to 36.3 on domestic services and 33.2 tonnes on cross-border services.

While the total of international accompanied CT services performed extraordinarily well and raised the number of trucks carried by about 13%, the domestic market segment lost 20% against 2009. As a result its share of the total accompanied CT volume dropped from 42.6% (2009) to 34.4% (2011) thus only shortly above the 2007 level (see Figure 2-1 and Figure 2-2).

*Figure 2-1: Accompanied CT by market segment: goods moved and trucks carried 2011*

CT market segment	Gross tonnes	N° of trucks	TEU
Domestic CT	5.421.430	149.153	347.530
International CT	9.448.570	284.397	662.650
<b>Total CT</b>	<b>14.870.000</b>	<b>433.550</b>	<b>1.010.180</b>

Source: KombiConsult analysis, CT service providers, UIRR

*Figure 2-2: Accompanied CT by market segment: TEU carried and goods moved 2009/2011*

CT market segment	TEU		% change 2011/2009	Gross tonnes		% change 2011/2009
	2009	2011		2009	2011	
Domestic CT	435.020	347.530	-20,1%	6.766.140	5.421.430	-19,9%
International CT	586.910	662.650	12,9%	8.350.760	9.448.570	13,1%
<b>Total CT</b>	<b>1.021.930</b>	<b>1.010.180</b>	<b>-1,1%</b>	<b>15.116.900</b>	<b>14.870.000</b>	<b>-1,6%</b>

Source: KombiConsult analysis, CT service providers, UIRR

### 2.3. Time series of accompanied combined transport until 2011

The 2002 survey the framework of the Capacity Study (2004) registered almost 550,000 road vehicles moved on domestic and cross-border services. Most likely, this was the all-time high of accompanied CT. Then, owing to the deregulation of international road transport with the new EU Member States in Central and Eastern Europe as of 2004 the transport volume of this CT sector heavily declined until, in 2005, it reached the preliminary bottom line of 323,060 shipments.

In the period from 2005 to 2009 the accompanied CT industry proved to be remarkably robust and raised the number of road vehicles carried over rail to almost 440,000. The growth was entirely fuelled by domestic accompanied CT specifically Ökombi's Wörgl-Brenner service. The volume more than quintupled between 2005 and 2009. Despite a reduction in 2011, it has remained the largest single accompanied service in Europe delivering a throughput of nearly 140,000 trucks. The total domestic accompanied CT in the period from 2005 to 2011 improved by 235%. In contrast to that the international volume stagnated at around 280,000 shipments. The most important cross-border line has become RAAlpin's German-Italian service between Freiburg and Novara, which recorded 93,500 road vehicles in 2011 (see Figure 2-3). Annex 3 contains the full O-D matrix.

*Figure 2-3: Accompanied CT, trucks carried by market segment and corridor 2005-2011*

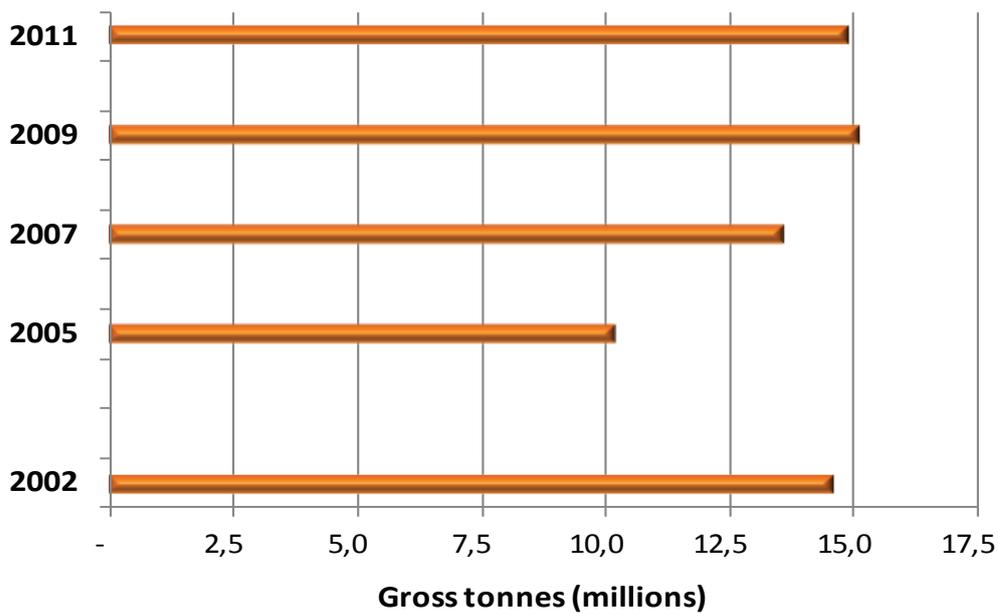
Market segment / corridor	Trucks carried				Percentage change	
	2005	2007	2009	2011	2011/2009	2011/2005
Domestic services						
Austria	32.353	115.776	176.706	138.454	-21,6%	327,9%
Switzerland	12.200	11.852	9.998	10.699	7,0%	-12,3%
<b>Subtotal domestic</b>	<b>44.553</b>	<b>127.628</b>	<b>186.704</b>	<b>149.153</b>	<b>-20,1%</b>	<b>234,8%</b>
International services						
Austria - Germany	519	5.085	-	-	/	-100,0%
Austria - Hungary	51.008	33.373	26.432	31.318	18,5%	-38,6%
Austria - Italy	53.981	72.006	60.483	88.339	-	-
Austria - Romania	11.549	-	-	-	-	-100,0%
Austria - Slovenia	49.811	53.869	30.420	36.464	19,9%	-26,8%
Croatia - Slovenia	-	27	-	-	/	/
France - Italy	17.300	20.418	22.632	7.250	/	/
Germany - Italy	87.974	97.776	111.925	121.026	8,1%	37,6%
Germany - Switzerland	2.575	121	-	-	/	-100,0%
Hungary - Slovenia	3.788	-	-	-	/	-100,0%
<b>Subtotal international</b>	<b>278.505</b>	<b>282.675</b>	<b>251.892</b>	<b>284.397</b>	<b>12,9%</b>	<b>2,1%</b>
<b>Total accompanied services</b>	<b>323.058</b>	<b>410.303</b>	<b>438.596</b>	<b>433.550</b>	<b>-1,2%</b>	<b>34,2%</b>

Source: KombiConsult analysis, CT service providers, UIRR

Because of the weakness of international accompanied CT, the total volume only rose by 34.2% from 323,060 trucks (2005) to 433.550 trucks (2011). With a plus of 46.1% the tonnage has achieved a considerably higher growth rate. It increased in the same period from 10.2 to 14.9 million gross tonnes. This result indicates a relative success as today's volume of goods moved on accompanied CT services is not much higher than it was in 2002 (see Figure 2-4).

The above results also clearly display that during the last decade accompanied transport has increasingly concentrated on a few trade lanes in or through Austria and Switzerland. It highlights the distinctive transport policy in these countries that seek to promote CT services in order to shift as many transalpine truck journeys as possible from road to rail. This particularly relates to trucks in transit through these countries. Other countries with the likely exception of France, in contrast to that, have suspended their support for accompanied CT be it in terms of financial contributions or favourable regulatory framework.

**Figure 2-4: Accompanied CT: goods moved 2002-2011**



Source: KombiConsult analysis, CT service providers, UIRR

## 3. Total combined rail/road transport volumes

### 3.1. Total CT volumes 2011

In the year 2011, the total CT volume in Europe including unaccompanied and accompanied transport amounted to 19,127,100 TEU (see Figure 3-1). This is a new record volume. Domestic CT services account for approximately 59% of the total TEU, international services for 41%. Due to strong growth of the unaccompanied sector in the period 2009 to 2011 it has extended its share of the total CT market from 93% to 94.7% (see also Figure 3-3).

The total CT tonnage, for the first time ever, has exceeded the 200 million threshold and finished at 206,712,030 gross tonnes (see Figure 3-2). The proportion of the domestic CT amounted to some 58% thus slightly less than when measured in TEU.

*Figure 3-1: Total CT by CT sector and market segment: TEU carried 2011*

CT market segment	Unaccompanied	Accompanied	Total
	TEU		
Domestic CT	10.928.140	347.530	11.275.670
International CT	7.188.780	662.650	7.851.430
<b>Total CT</b>	<b>18.116.920</b>	<b>1.010.180</b>	<b>19.127.100</b>

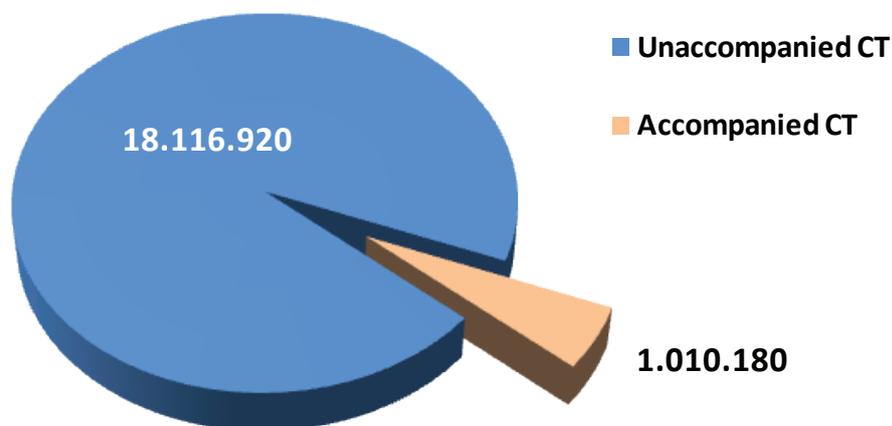
Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics

*Figure 3-2: Total CT by CT sector and market segment: goods moved 2011*

CT market segment	Unaccompanied	Accompanied	Total
	Gross tonnes		
Domestic CT	115.053.570	5.421.430	120.475.000
International CT	76.788.460	9.448.570	86.237.030
<b>Total CT</b>	<b>191.842.030</b>	<b>14.870.000</b>	<b>206.712.030</b>

Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics

**Figure 3-3: Market shares of CT sectors: TEU carried 2011**



Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics

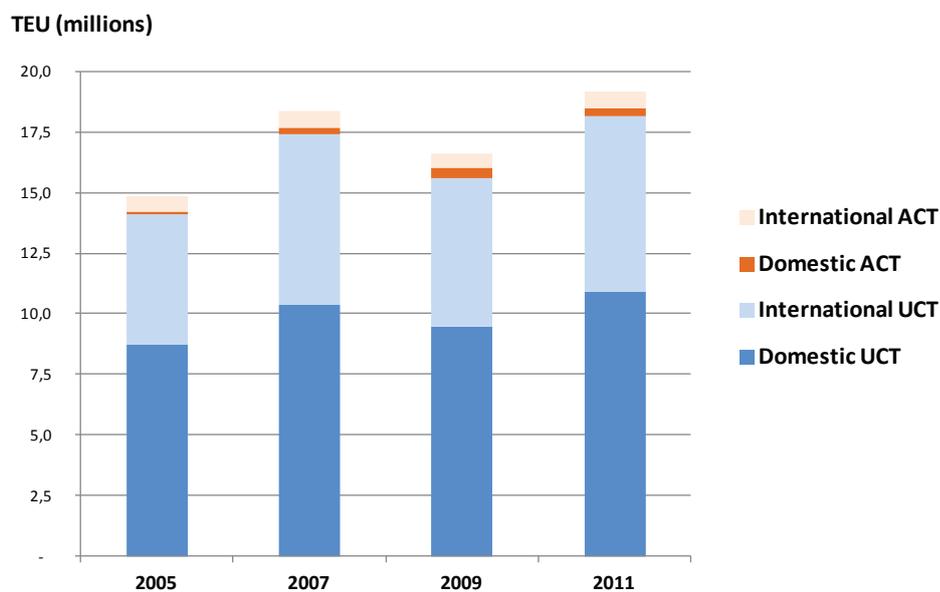
## 3.2. Time series of total CT volumes until 2011

Between 2009 and 2011 total CT increased by 15.2% pushing the volume up 2.5 million TEU, from 16.6 to 19.1 million TEU. Compared to 2005 when CT service providers conveyed 14.8 million TEU, the growth rate reaches nearly 29%. This result provides evidence that the European CT industry has more than compensated for the downturn encountered in the economic crisis in the year 2009. However the share of international CT – including unaccompanied and accompanied services – against total CT has not improved but remained almost constant at about 41% if we compare 2005 and 2011 volumes (see Figure 3-4).

The results for total CT measured in goods moved are very similar (see Figure 3-5). In the six years between 2005 and 2011, the European CT industry carried an additional 50 million tonnes thus totalling 206.8 million gross tonnes. This corresponds to an increase of 32.8%.

Figure 3-4: Total CT by mode of CT and market segment: TEU carried 2005-2011

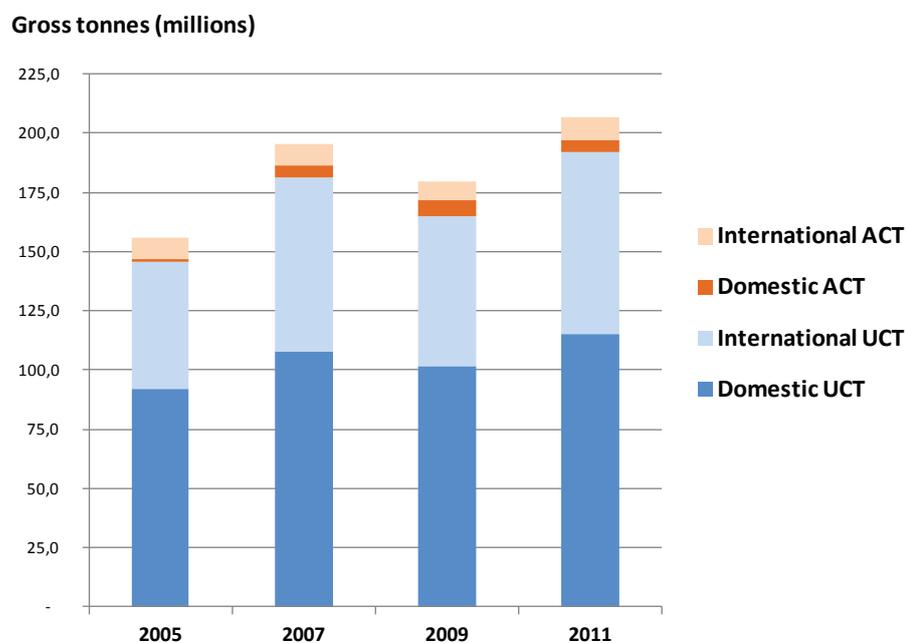
CT market segment	TEU (millions)				Percentage change	
	2005	2007	2009	2011	2011/2009	2011/2005
Domestic UCT	8,7	10,4	9,5	10,9	15,7%	25,5%
International UCT	5,4	7,0	6,1	7,2	17,5%	33,6%
Domestic ACT	0,1	0,3	0,4	0,4	-20,5%	250,0%
International ACT	0,7	0,7	0,6	0,7	11,9%	1,5%
<b>Total CT</b>	<b>14,8</b>	<b>18,3</b>	<b>16,6</b>	<b>19,1</b>	<b>15,2%</b>	<b>28,9%</b>



Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics, partly estimated

Figure 3-5: Total CT by mode of CT and market segment: goods moved 2005-2011

CT market segment	Gross tonnes (millions)				Percentage change	
	2005	2007	2009	2011	2011/2009	2011/2005
Domestic UCT	91,9	107,9	101,6	115,1	13,3%	25,2%
International UCT	53,6	73,6	63,0	76,8	21,9%	43,3%
Domestic ACT	1,5	4,6	6,8	5,4	-20,6%	260,0%
International ACT	8,7	9,0	8,3	9,5	14,5%	9,2%
<b>Total CT</b>	<b>155,7</b>	<b>195,1</b>	<b>179,7</b>	<b>206,8</b>	<b>15,1%</b>	<b>32,8%</b>



Source: KombiConsult analysis, CT service providers, UIRR, offices for statistics, partly estimated

## 4. The combined transport industry in Europe

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### 4.1. Market size

Until the late 1990s combined rail/road transport was a rather small market. In the whole of Europe some 30 specialized companies – disregarding railways operating rail traction services - were supplying specialized CT services. The 2012 Report has identified a total of 135 companies which provided unaccompanied CT services in the year 2011. This represents 19 additional companies compared to the previous Report albeit a minority of new companies were just beginning to operate in niche markets. Here we can name COMSA, CombiWest, Emons, IGS Schreiner, Logitren or Quadrum for instance.

Saying this, the growth of the unaccompanied CT industry is mainly resulting from new entrants even if, in the period under analysis, some historical combined transport operators have actually disappeared (see also section 6.1).

The complete list of CT service providers is presented in annex 1 to this report.

### 4.2. Business models of unaccompanied CT service providers

Based on the analysis of the CT industry four categories of business models can be distinguished:

- Combined transport operators.
- Logistics service provider in operator role
- Railway undertaking in operator role
- Shippers, terminal and port operators in operator role

In every category there are companies, which are completely dedicated either to continental or maritime CT services or offer the full range of CT services. The requirements of both markets are very distinctive leading to specific business models. In order to avoid unnecessary redundancies in this report the differences in the business models between continental and maritime CT services will only be elaborated once, exemplified at the CT operator business model.

### Combined transport operator for continental or maritime CT services

In the early days, the CT operator was a new type of specialized logistic service provider designed as a connecting link or arbitrator between the supply side that is railways, and the demand side. CT operators were requested to address the needs of potential customers - shippers, forwarding agents, road operators, shipping lines – towards railways and convey the capabilities of a rail-based CT service back to the market. To serve these purposes CT operators were established as legally and economically independent companies with shareholders from the forwarding and road transport industry and railways. Over time, the role of CT operators has developed and seen them more heavily involved in service definition. They still retail the service capacity to the market.

The **general business model of CT operators** can be characterized as follows (see Figures 4-1 to 4-3):

- CT operators develop CT services on account of third parties. They don't move goods or shipments of their own and don't provide for proprietary CT loading units.
- CT operators increasingly operate block trains.
- CT operators retail capacity to their customers. In most cases they operate multi-user services. They however also run “company trains” which are services dedicated to a single user who takes over the economic risk from the CT operator.
- The operators' aim is to keep assets low. From an operational viewpoint, they purchase rail traction from railways who in turn buy train paths from infrastructure managers (IM); they buy the terminal slot (the time for handling in- and outbound trains) from terminal operating companies either directly or buy a package from a railway undertaking.
- Many CT operators control a fleet of intermodal wagons but they also rely on rentals from railway undertakings and specialist companies.

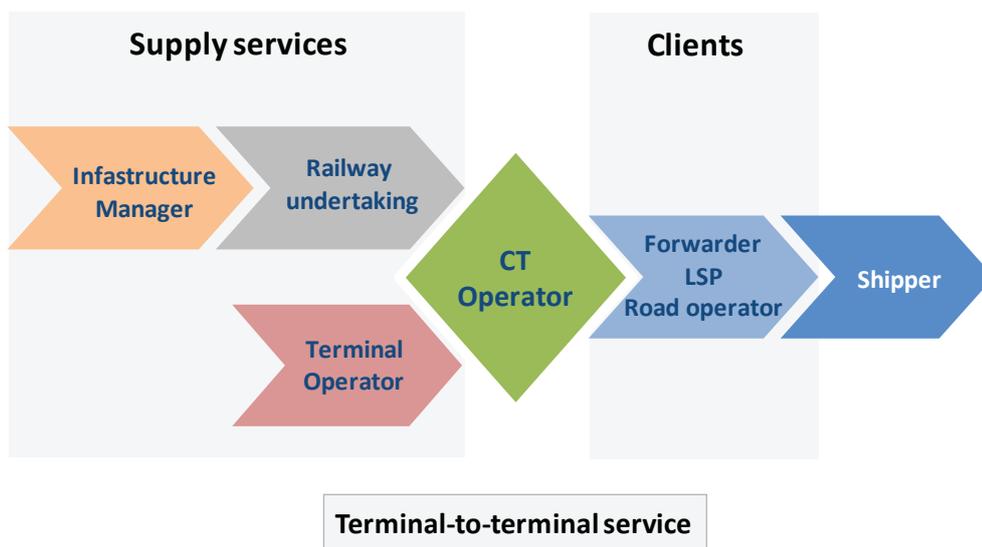
These features basically characterize all CT operators whether they serve the continental or the maritime market. The difference between both business models essentially is in the extent of the supply chain and the scope of logistics services.

The key target customers of **CT operators supplying continental CT services** are logistic service providers - forwarders and road operators – who design door-to-door logistics for shippers. They use own or rented CT equipment, organize and – eventually – carry out the pick-up and delivery of CT loading units by truck. Hence CT operators for continental services deliver terminal-to terminal transport services comprising of the following components of the CT supply and value chain (see Figure 4-1):

- Rail transport of the loading units of their clients including the provision of wagons.

- Terminal handling (transshipment) of loading units on both ends of the rail journey.
- Administrative clearance of pick-up and delivery trucks (check-in/check-out) and the technical and safety check of loading units at both terminals.

Figure 4-1: Business model: CT operator for continental services



Source: KombiConsult

**CT operators serving the maritime CT market** are required to offer a full-service package of a port-to-door service for marine containers to their customers. They should be able to deliver each component of the CT supply and value chain even if not every client requires it. That is to say : (see Figure 4-2 and Figure 4-3):

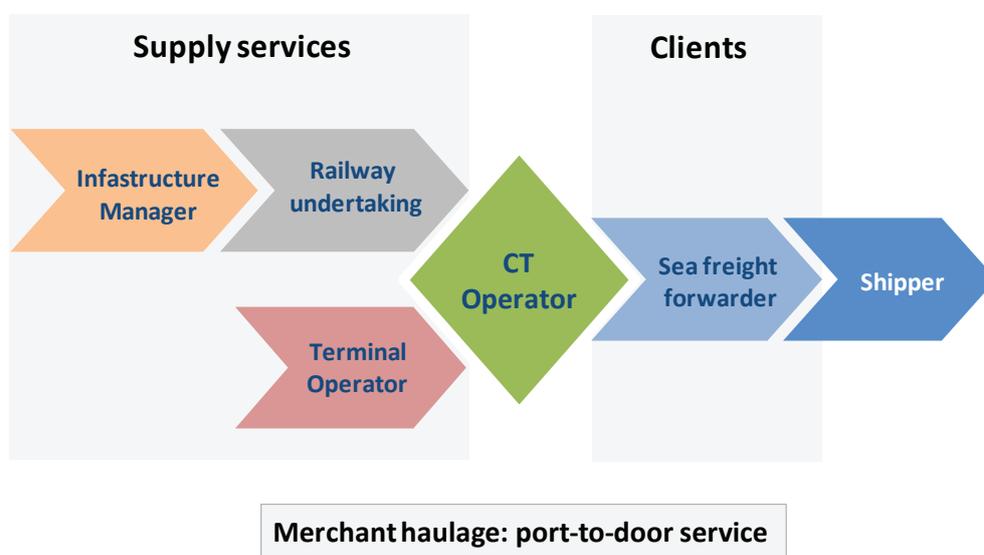
- Rail transport of the marine containers including the provision of wagons
- Terminal handling of the containers at the inland terminal, whereas the responsibility of the transshipment of the containers at the port-related rail terminal is with the shipping line (the cost of the transshipment between seaport terminal and any hinterland mode of transport is included in the so-called Terminal Handling Charge - THC)
- Administrative clearance of pick-up and delivery trucks (check-in/check-out) and the technical and safety check of containers at the inland terminal.
- Pre-or post-haulage of containers by road at the inland terminal including the pick-up or delivery of empty containers at empty container depots.
- Customs clearances.

Maritime transport knows two types of processing the movement of the container depending on who controls the inland haulage. In the case of **merchant haulage** a shipper (= merchant) takes control of the door-to-door transport and negotiates the terms both of sea and hinterland

transport directly with a shipping line. Most typically, the shipper however contracts the operations out to a sea freight forwarder who – in case of a CT service – becomes the client of a CT operator (see Figure 4-2).

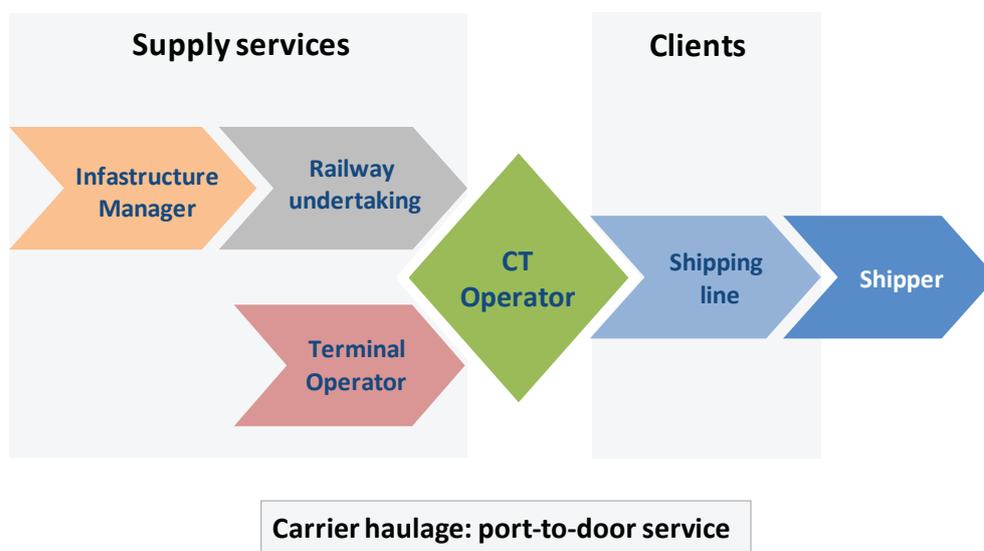
**Carrier haulage** is the movement of the container under the control of the shipping line (= carrier) using a haulage contractor nominated by the shipping line. If the carrier uses a CT service supplied by a CT operator he may procure for the full port-to-door logistics or only some components such as the port-to-(inland) terminal transport (see Figure 4-3).

Figure 4-2: Business model: CT operator for maritime services (merchant haulage)



Source: KombiConsult

Figure 4-3: Business model: CT operator for maritime services (carrier haulage)



Source: KombiConsult

## Logistics service provider in operator role

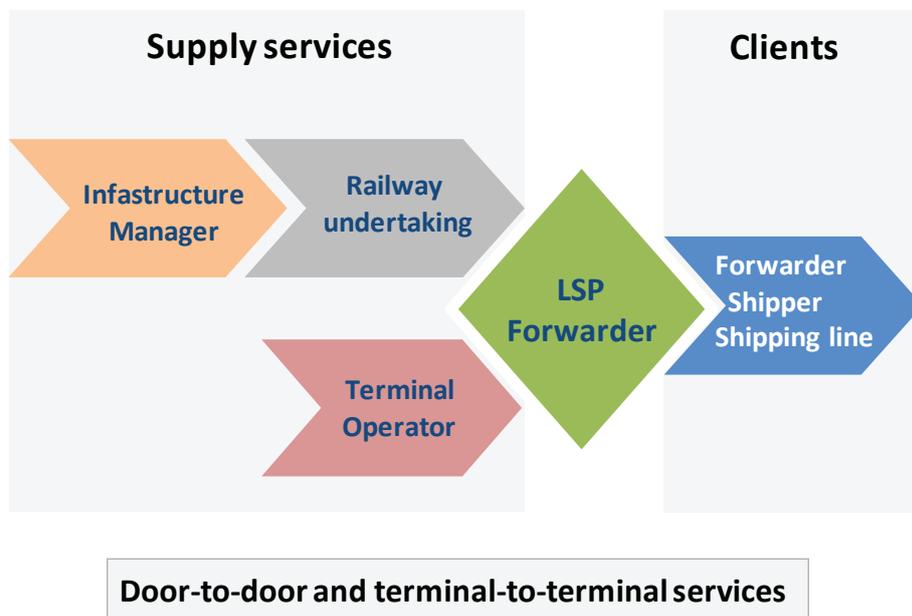
For a long time demand and supply side of CT services could clearly be distinguished and actors attributed to one or the other category. Since about a decade it can be observed that more and more logistics service providers, for example, forwarders, shipping lines or barge operators, traditionally on the demand side, have entered the CT market and developed a new business model as **logistics service provider in operator role** (see Figure 4-4). They initially started proprietary CT services to convey shipments of their own but quickly offered spare transport capacity to other users in order to improve their capacity utilization, thus assuming the role of an operator, and eventually began to specifically plan CT services for third party. Some of these new operators even push the integration further and applied for a licence as railway undertaking or – more often - are getting hold of terminal handling facilities such as ERS, Greenmodal, ISC, Nosta or Pöhland.

By establishing CT services the companies extended their existing value chain and accomplished an integration of the supply chain. At the same time they “eliminated” the broker function of the CT operator. Depending on the CT sector covered – continental or maritime CT services – and the requirements of their customers – other logistics service providers, shippers or shipping lines (In case of maritime CT) - they may deliver door-to-door or terminal-to-terminal services. Consequently, their services may cover the entire range of the CT supply chain, as follows:

- Own and third party road haulage.
- Terminal handling including administrative clearance of pick-up and delivery trucks (check-in/check-out) and the technical and safety check of containers at the inland terminal.
- Road pick-up and delivery services.
- Supplementary logistics services e.g. customs clearances, empty container depot.

The trend towards an increasing number of logistics companies establishing themselves as operators of CT services could again be recognized in the 2012 survey. About 50 of the 136 CT service providers identified can be allocated to this business model, ten more than in the previous 2010 survey.

Figure 4-4: Business model: Logistics service provider in operator role



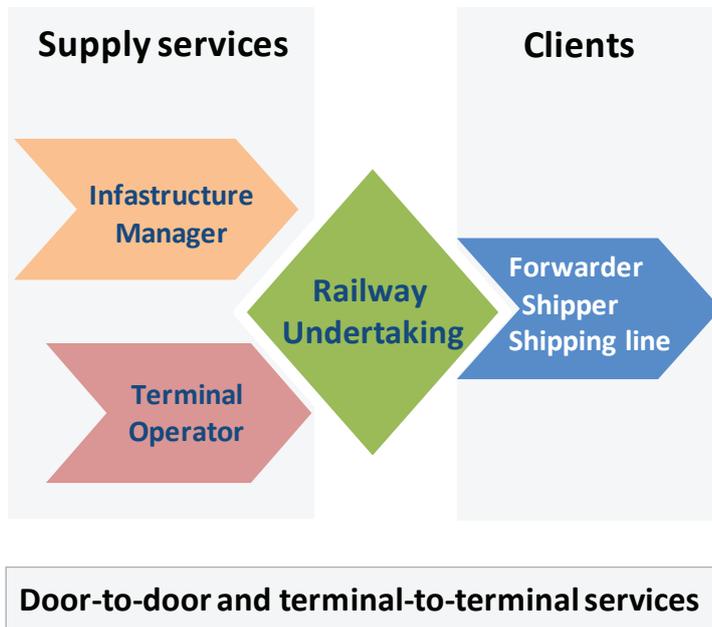
Source: KombiConsult

### Railway undertakings in operator role

Virtually all incumbent European railway undertakings and a great number of new entrants are involved in CT services as train operating companies. Additionally, many railways are moving third party CT shipments on rail freight services designed and operated by themselves. With regard to the function they take on in the CT supply chain and the scope of services provided two main categories of railways can be distinguished:

- (1) Most incumbent railway undertakings have maintained a network of domestic and international wagonload services. These systems generally enable customers to ship CT units like any other cargo. If a railway doesn't offer specifically designed CT services and market them actively thus limiting itself to a rather "passive" role in CT such a railway will not be considered as a CT operator.
- (2) In contrast to that there are quite a lot of railway undertakings that design, operate and sell dedicated CT services and can therefore be regarded as CT service providers. Their business model **railway undertaking in operator role** resembles very much the business model adopted by logistics service providers in so far as they establish a direct connection with customers thus bypassing the operator (see Figure 4-5). Railways as CT operators may supply the full range of CT services required by the segment served (maritime, continental, domestic or international CT services) or decide to focus on certain market segments and services. Consequently, door-to-door, port-to-door or terminal-to-terminal services can be part of their portfolio. They may also operate multi-user CT systems as well as company trains.

Figure 4-5: Business model: Railway undertaking in operator role



Source: KombiConsult

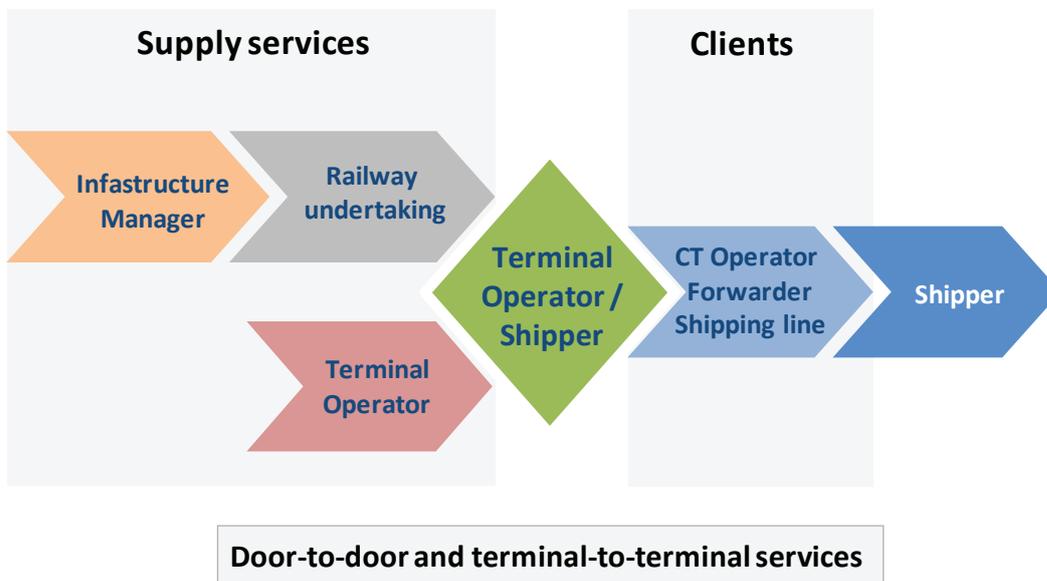
### Shippers, terminal and port operators in operator role

Recent years supply evidence that the efforts for a vertical integration of the CT supply chain is not limited to railway undertakings and logistics service providers. Even shippers and operators of sea port terminals or inland ports, the traditional customers or suppliers of sub-services for CT trains, have entered the market. In most cases the parent company doesn't keep the CT service activity within its organisation but seeks to establish a specialized subsidiary, which takes on the role of a CT operator then (see Figure 4-6 overleaf).

By doing so, the **terminal and port operators** primarily intend to secure and stimulate their core business by implementing more and improved CT services from and to their operating locations.

As far as **shippers** are concerned, two types of developments have been witnessed. Some shippers especially from the construction industry who forward or receive large volumes of cargo by conventional rail have taken the opportunity of a liberalized rail access to establish a railway undertaking with an aim to reduce costs. Some of them have extended their portfolio and started to offer rail traction services to third party and by extent to the CT business. For others it might have stemmed from the necessity to have tailor-made services. Just as terminal operators they usually outsourced the CT activities and established a CT service provider. In order to enhance the capacity utilization of CT trains they "opened" the services for other users and as a result have taken on the role of CT operators.

Figure 4-6: Business model: Terminal operators and shippers in operator role



Source: KombiConsult

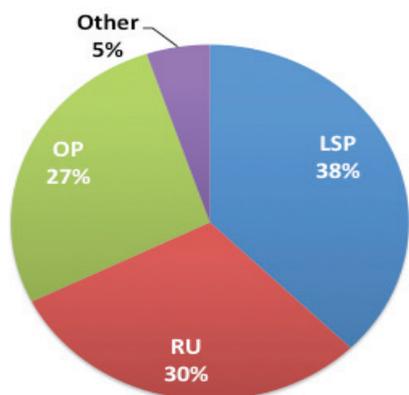
### Results of 2012 survey

According to the results of the 2012 survey on which the Report is based, about 27% of the total of 136 CT service providers can be allocated to the group of “classical” CT operators. This is a remarkable development considering that their share was close to 100% about 15 years ago. Now the largest group in the CT industry are logistics service providers supplying dedicated CT services whose proportion of the number of CT companies has increased to 38%.

Railway undertakings account for some 30% and shippers and terminal operators for less than 5% of the total market.

Notwithstanding this tremendous change of the CT market structure it should be taken into account that CT operators continue to provide most volumes. In the year 2011, they carried more than 50% of the total volume of unaccompanied CT in Europe.

Figure 4-7: Allocation of European CT service providers to business models



Source: KombiConsult

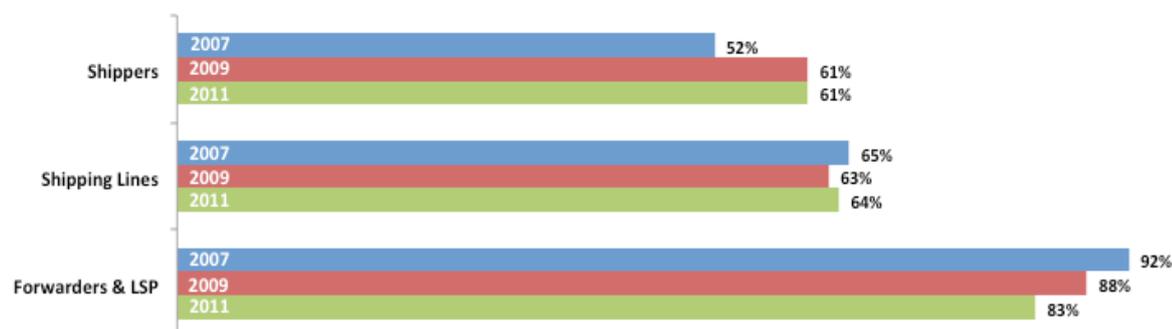
### 4.3. Market approach of CT service providers

This section analyses the market approach of CT service providers in the reporting period 2011 and a comparison with the results of previous surveys. It relates to the following main issues: What are the key customer groups? Which sectors and market segments do CT service providers cover?

#### Market positioning

Forwarders remain the key customer group although their importance has been decreasing since 2007. This is likely to be a consequence of an increasing number of logistics service providers who became CT operators in their own right but are not prepared to supply services to companies of their own industry. The relevance of shipping lines and shippers as customers has remained stable since the last survey (see Figure 4-8).

Figure 4-8: Target customer groups of CT service providers, 2007/2009/2011



Source: KombiConsult analysis, 89 CT service providers

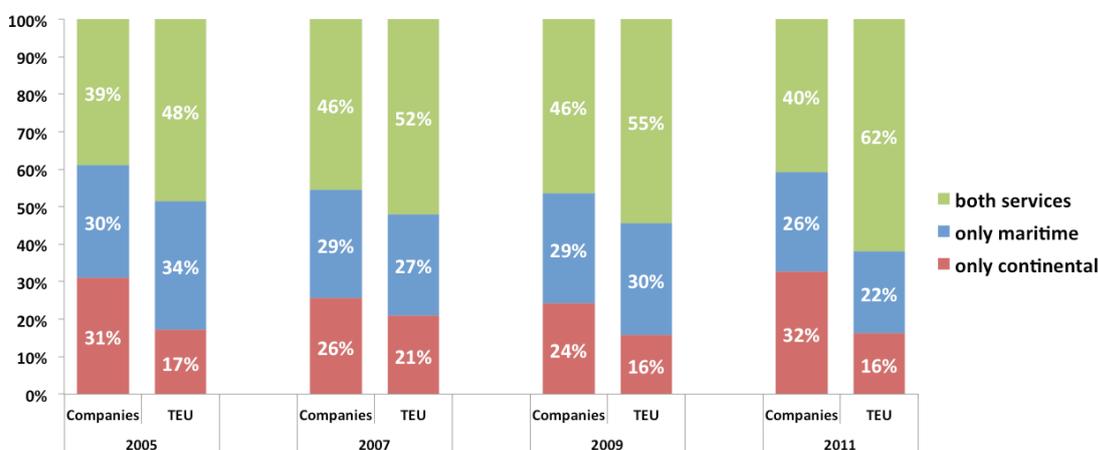
#### Scope of CT services

(1) Unaccompanied CT knows two main sectors of activities, maritime and continental CT. For the years 2005 to 2011, Figure 4-9 presents in the left column the share of CT companies offering only maritime CT, only continental CT or both CT services. The right column shows the share of every category of companies weighed by the TEU-related transport volume.

In the reporting period 2011, 26% of the total number of CT companies only focused on the maritime market, 32% only on continental CT services and 40% covered both sectors. The results concerning the latter two categories are surprising since the trend of earlier years according to which CT service providers were reducing the specialization on a single sector, seems to have reversed.

On the other hand, as shown in the right column, 40% of CT companies providing maritime and continental services account for 62% of the total European CT volume whereas 32% of service providers focusing on continental services end up at half of this market share (16%) by TEU. The large difference between these two figures can be explained by two developments. First, some new companies emerged in the continental market but can't report large volumes of shipments. Second, the maritime sector witnessed consolidation trends and a certain shift of volumes from full-service to specialized CT service providers.

**Figure 4-9: Target CT sectors by number of CT service providers and weighed by transport volume (TEU), 2005/2007/2009/2011**

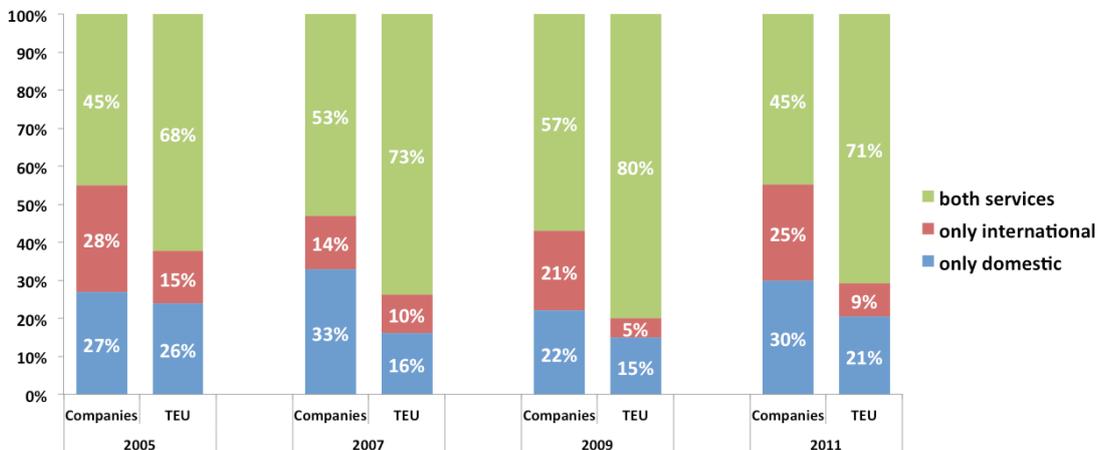


Source: KombiConsult analysis, 114 CT service providers

(2) The second analysis relates to the geographical scope of market segments served by CT companies. In 2011, 25% of all CT service providers only operated international services, 30% only domestic services and 45% both markets. Although this trend was not anticipated, from a volume perspective, these companies still dominate European CT and account for approximately 71% of all TEUs moved. CT service providers that exclusively deliver national services account for 21% of the total unaccompanied CT volume and the market share of the 25% of specialists in international CT just reaches 9% (see Figure 4-10).

These results are very similar to those reported above under (1) and also confirm that the wider the scope of CT segments served, the larger the market potential and the larger the market share can be. A comparison of Figures 4-9 and 4-10, additionally, suggests that the increase of CT service providers specialized in continental services mainly results from companies, which also concentrate on their local, national markets.

**Figure 4-10: Target CT market segments by number of CT service providers and weighed by transport volume (TEU), 2005/2007/2009/2011**

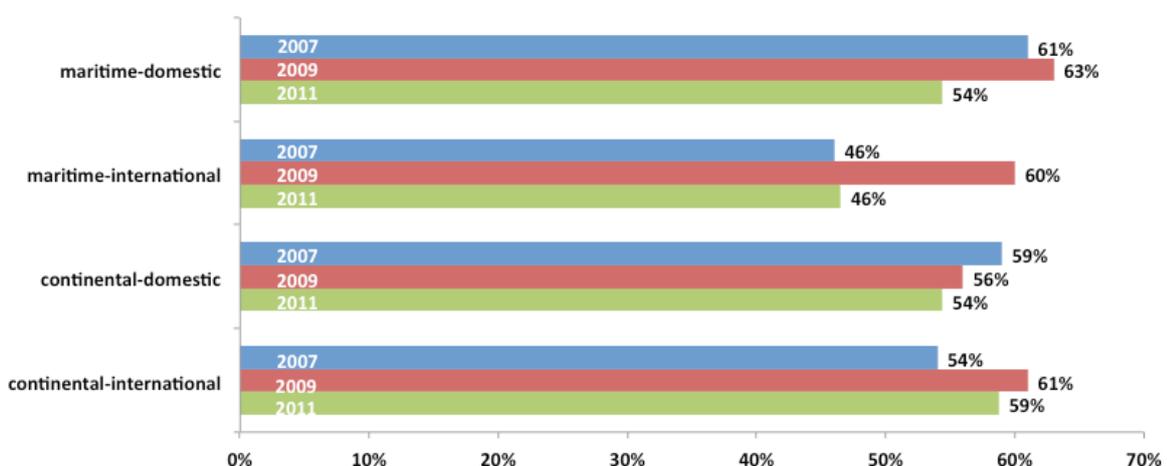


Source: KombiConsult analysis, 114 CT service providers

(3) The above allows an assessment of the percentage of European CT service operated on the four market segments: (see Figure 4-11 overleaf):

- The percentage of companies offering domestic maritime, domestic or international CT is virtually on par between 54% and 59% of the total number of service providers.
- Except for the market segment “domestic maritime CT” the changes in the market shares are not significant.
- The decline of the number of companies supplying international maritime CT services reflects the consolidation process on this market described above.

**Figure 4-11: Market segments covered by CT service providers, 2007/2009/2011**



Source: KombiConsult analysis, 114 CT service providers

## 5. The importance of the combined transport industry

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Existing consolidated macro-economic statistical data adjusted for double-counts which is regularly compiled for most industries does unfortunately not include combined transport, hence the regular publication of UIC's Reports on Combined Transport. These Reports propose a review of the following key performance indicators of the CT industry:

- Revenues from unaccompanied CT services,
- Employment in the unaccompanied CT industry,
- Green house gas emissions avoided through unaccompanied CT services,
- Mode shift benefits of unaccompanied CT services,
- Position of CT in the rail sector.

The methodology for assessing these indicators and the results are presented below.

### 5.1. Revenues from unaccompanied CT services

This parameter was an innovation in the 2010 Report. In order to avoid double counts all revenues reported by railway undertakings, which exclusively or overwhelmingly supplied rail traction services to CT operators in 2011, were not taken into account. This exercise resulted in total revenues of the companies included of € 3.2bn.

According to the statistical data base these CT service providers carried more than 10.9 million TEU on unaccompanied CT services representing 60.3% of the total 2011 volume.

Based on this data an average income of € 293 per TEU moved by the CT service providers in question could be calculated (€ 3.2bn divided by 10.9 m TEU). Then it was assumed that this average income is representative for the entire unaccompanied CT industry and the revenues be extrapolated with the total unaccompanied CT volume of 18.1 million TEU. Based on that the aggregated revenues of the European CT industry are estimated at € 5.3bn in the year 2011 (see Figure 5-1).

The 2011 result is supposed to be a new all-time high and means an increase of 15.4% against 2009 and a small growth of approximately 2% compared to the previous record year 2007 (see Figure 5-2).

Figure 5-1: Analysis of 2011 revenues from unaccompanied CT services

CT Volume 2011 (TEU)	Ø Revenues per TEU (€)	Total CT Revenues 2011 (€)
18.111.920	293	<b>5.306.793.000</b>

Source: KombiConsult analysis, CT service providers

Figure 5-2: Estimated revenues from unaccompanied CT services, 2007/2009/2011

Total CT Revenues (€bn)		
2007	2009	2011
<b>5.21</b>	<b>4.6</b>	<b>5.31</b>

Source: KombiConsult analysis

## 5.2. Employment in the unaccompanied CT industry

In order to determine staff employed in and for the European CT industry, data relating to employment by **CT service providers**, rail operating companies, terminal operators and infrastructure managers was analysed and evaluated. The methodology applied is similar to the approach used to derive Industry revenues.

(1) The consolidated labour force of those CT service providers that reported proper data accounted for 7,957 employees in 2011. The companies carried some 11.5 million TEU and thus represented 63.3% of the total unaccompanied CT volume in this year. This corresponds to a calculated average of 1,442 TEU per employee. Though being aware that the labour intensity and the size of employment depends on various impact factors such as the market positioning or the scope of supply chain integration we extrapolated this average figure for all unaccompanied CT service providers resulting in an estimated total of 12,600 employees (see Figure 5-4).

(2) **Rail operating companies** usually don't have employees dedicated to CT services maybe except for administration. Another approach was developed to assess the labour force of rail operation services for unaccompanied CT.

An analysis of the average number of employees required for operating a daily block train service was undertaken. Based on a mean distance of about 350km for domestic and 800km for international services (see section 5.5) the need for locomotive drivers were evaluated

regarding the typical periods of shifts. Further the employees required for operational tasks such as wagon master, shunting services, or wagon management were estimated based on practical experience. Finally, an average number of persons in overhead departments was derived. This exercise resulted in a total average of 3.5 employees involved in the operation of a daily domestic block train and 7 employees for an international train (see Figure 5-3).

Second, based on the total amount of CT block trains (see section 5.5) and considering an annual number of 250 traffic days the average number of daily block trains in 2011 could be derived. They amounted to 683 trains in domestic and 532 trains in international unaccompanied CT.

Finally, the calculated labour force at rail operating companies dedicated to unaccompanied CT services resulted from multiplying the number of daily block trains with the average number of employees per block train service. In 2011, it amounted to about 6,100 employees (see Figure 5-4).

**Figure 5-3: Estimated average number of employees at rail operating companies for unaccompanied CT block train services**

CT market segment	Ø number of employees per block train service			
	Loco driver	Operations	Overhead	Total
Domestic CT	1.0	1.5	1.0	<b>3.5</b>
International CT	3.5	2.0	1.5	<b>7.0</b>

Source: KombiConsult analysis

(3) Using the methodology of the 2010 report, **employment at CT terminals** was assessed. Accordingly, a terminal operating company, which is only involved in the basic functions of a facility, i.e. handling, clearance of trucks and trains, achieves an annual volume of 5,000 to 6,000 TEU per staff. A company, which supplies additional logistical services such as empty container depot or trucking, reaches 2,000 to 3,000 TEU per employee. Considering that maritime CT services whose check-in/check-out processes tend to be more labour-intensive than continental services, account for about 60% of the total unaccompanied CT volume, a weighted average of 3,700 TEU per staff was used. Based on 2011 unaccompanied CT volumes, the labour force at CT terminals is estimated at 4,900 employees (see Figure 5-4).

(4) The staff of **infrastructure managers (IM)** cannot be easily allocated to CT services. Based on RNE data, it is assumed that IMs in Europe employ about 300,000 staff. Unaccompanied CT is estimated to account for about 15 to 20 per cent of the total European freight traffic. According to IMs themselves, CT services require less than proportionate labour force and an estimate of 5% of the total IM staff was put forward for unaccompanied CT or approximately 15,000 staff (see Figure 5-4).

(5) Based on this analysis, the total employment value of unaccompanied CT in Europe is estimated at 38,600 staff in the reporting year 2011 (see Figure 5-4).

*Figure 5-4: Estimated number of employees in the unaccompanied CT industry, 2011*

Sector	Employees 2011
CT service providers	12.600
Train operating companies	6.100
Terminal managers	4.900
Infrastructure managers	15.000
<b>Total staff</b>	<b>38.600</b>

Source: KombiConsult analysis

### 5.3. Avoidance of CO<sub>2</sub> emissions through unaccompanied CT services

Unaccompanied CT services are recognized for being more energy-efficient and environmentally friendly than through-road operations. The most important impact is that by shifting goods from road to CT, greenhouse gas emissions and emission of carbon dioxides in particular, which are a major contributor to the climate change, can be reduced considerably (see for example EU White Paper (2012) or the PACT project “Combined Transport CO<sub>2</sub> Reduction”). In order to calculate the positive effects of unaccompanied CT on the environment, the following data and assumptions have been used:

- CO<sub>2</sub> emissions (according to topical EU data):
  - Rail : 30.91 g/tonne-km
  - Road : 97.18 g/tonne-km
- Average transport distance of unaccompanied services:
  - Domestic CT: 350 km
  - International CT: 800 km

On the basis of the above figures, it is assumed that unaccompanied CT services in Europe have avoided the emissions of more than 6.7 million tonnes of carbon dioxides in 2011 (see Figure 5-5). Consequently, the movement of each TEU by CT has contributed to a reduction of 370kg of CO<sub>2</sub>.

**Figure 5-5: Savings of CO<sub>2</sub> emissions through unaccompanied CT services, 2011**

CT market segment	Transport volume (tonnes)	Average distance (km)	Transport performance (bn tonne-kms)	Savings of CO <sub>2</sub> emissions (tonnes)
Domestic CT	115,053,570	350	40.3	2,668,610
International CT	76,788,460	800	61.4	4,071,020
<b>Total CT</b>	<b>191,842,030</b>		<b>101.7</b>	<b>6,739,630</b>

Source: KombiConsult analysis

## 5.4. Mode shift benefits of unaccompanied CT services

Mode shift benefits are the savings of external costs achieved by shifting freight from road to CT services. According to the Marco Polo Programme of the European Commission, rail transport is reducing the external costs related to, for example emissions of greenhouse gases and unpaid costs of the society for accidents, by € 0.02 per tonne-km compared to road.

Based on this indication and the transport performance of CT analysed in section 5.3, the total mode shift or external benefit of unaccompanied CT was calculated at €2.034bn in the year 2011. Considering the total volume of unaccompanied CT of about 18.1 million TEU it means that every TEU carried on rail has generated an average external benefit of €112 for the Society as a whole (see Figure 5-6).

**Figure 5-6: Mode shift benefits of unaccompanied CT services, 2011**

CT market segment	Transport performance	Benefit of CT over road	Total CT benefit	CT benefit per TEU carried
	(bn tonne-kms)	(€/tonne-km)	(€bn)	(€)
Domestic CT	40.3	0.02	0.806	74
International CT	61.4	0.02	1.229	171
<b>Total CT</b>	<b>101.7</b>		<b>2.034</b>	<b>112</b>

Source: KombiConsult analysis, Marco Polo calculator

## 5.5. Position of the CT industry in the rail sector

Only five European countries seem to publish data on the share of CT in relation to rail freight (see Figure 5-7). The data shows that in countries with very “mature” CT systems such as Germany, Sweden and the UK, combined transport has a significant market share of rail freight which range from 26% to 35%. In Poland, where CT is undergoing a structural change, the share of CT is small compared to wagonload transport.

Spain is a special case. The very high proportion of CT is somewhat misleading since Spain doesn’t support a single-wagon network anymore, which in other countries still generates a comparatively high tonnage.

**Figure 5-7: Share of CT of total rail freight transport by country, 2011**

Country	Unit	Total rail freight	CT	CT as % of total rail
Germany	bn tkm	113,32	39,79	35,1%
	m tons	374,74	76,51	20,4%
Poland	bn tkm		2,39	4,5%
	m tons		5,74	2,3%
Spain	bn tkm	7,56	2,98	39,4%
	m tons	17,33	5,57	32,1%
Sweden	bn tkm	22,86	5,94	26,0%
	m tons	67,91	11,61	17,1%
United Kingdom	bn tkm	21,06	6,31	30,0%

Source: KombiConsult analysis, CT service providers

Another indicator for CT’s role for railway undertakings is the market share of trains operated on the network. While the 2012 survey on CT elaborated an estimation of CT block trains, no statistical data is available for conventional block trains. A comparison of both rail sectors is not possible.

Based on the findings of the survey, it can be estimated that, in 2011, CT service providers operated about 329,300 block trains. More than 92% or 303,900 trains ran on unaccompanied CT services, 25,400 trains carried road vehicles on accompanied services (see Figure 5-8).

Compared to 2009 the number of block trains has increased by 6.8%. This is considerably less than the growth of volume by TEU reaching 16.3%. Even if we consider that a certain percentage of services have been upgraded in terms of train length and weight, the above result suggests that, in the reporting period, CT trains generally demonstrated improved capacity utilization compared to the “crisis year” 2009.

But what is really surprising is that the CT service providers operated even fewer trains than in the previous “boom year” 2007 in spite of an increase of volumes since (see Figure 5-9).

**Figure 5-8: Volume of CT block trains by CT market segment, 2011**

CT market segment	TEU carried	Block trains
Unaccompanied CT		
Domestic	10.928.140	170.800
International	7.188.780	133.100
<b>Subtotal Unaccompanied CT</b>	<b>18.045.300</b>	<b>303.900</b>
Accompanied CT	1.010.180	25.400
<b>Total CT</b>	<b>18.045.300</b>	<b>329.300</b>

Source: KombiConsult analysis, CT service providers

**Figure 5-9: Volume of CT block trains, 2007/2009/2011**

Total Block Trains		
2007	2009	2011
<b>333.035</b>	<b>308.400</b>	<b>329.300</b>

Source: KombiConsult analysis, CT service providers

## 6. Highlights and trends of combined transport

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This new section of the Report is designed to describe and reflect on trends within the CT industry and developments, which impact on the demand for and supply of CT services. Basically, it will cover events and highlights observed during the reporting period from 2009 to 2012. In some cases, however, it was required to go back a bit further in time to present the roots or the background of recent developments. The section covers the following topics:

- CT market trends
- Infrastructure
- Policy and regulatory measures
- Innovations in the CT industry

### 6.1. Combined transport market trends

#### **Consolidation v enlargement of CT industry**

Combined transport in Europe has seen two contrasting trends in recent years. While some long-time operators of intermodal services vanished several new companies have entered the market and contributed to enlarge the total number of intermodal actors.

The most striking event certainly was the liquidation of Intercontainer-Interfrigo (ICF), Basel, which once was one of the leading European intermodal companies operating a large network of cross-border services. In November 2010 the shareholders decided to wind up ICF after almost 45 years of operations thus ending a period of financially critical years. However, the overwhelming majority of ICF's services could be maintained and were taken over by various other combined transport operators.

A critical economic situation also was the catalyst which led operators to be integrated into incumbent railway undertakings. This was the case for T.R.W, Bruxelles, Novatrans, Paris, Intercontainer Austria, Wien, and Transfracht, Frankfurt am Main.

The Belgian T.R.W. and the French Novatrans, established in 1967 and 1965 respectively, were founding members of the UIRR.

T.R.W. was merged into SNCB Logistics in 2009 with an exclusive focus on wagon rental activities. The core business of TRW, the supply of continental CT services, was handed over to Interferryboats (IFB), SNCB's subsidiary for the supply of CT hinterland services.

In the same year, the French railways SNCF Geodis took control of Novatrans by ramping up its share of the company's equity to 80%. Meanwhile SNCF Geodis holds more than 96% of the joint-stock capital. Since the economic situation of Novatrans hadn't significantly improved the new ownership investigated various options. In the Autumn of 2012, SNCF Geodis was scheduled to sell Novatrans to the Groupe Charles André (GCA), a logistics company and long-lasting customer of Novatrans.

With an aim to financially rehabilitate Intercontainer Austria (ICA), who operated unaccompanied services, Rail Cargo Austria (RCA), ICA's majority shareholder, integrated the company in its structure in 2011. The former activities are now being performed as a profit centre of RCA Intermodal.

The very same objective prompted Deutsche Bahn (DB) and the Hamburger Hafen und Logistik (HHLA) to rearrange the ownership structure of their mutual interests in various CT service providers. While DB has pulled out of Polzug and Metrans, HHLA transferred its 50% stake in Transfracht (TFG) to DB Mobility Logistics - now its sole owner.

In contrast to the above, 2011 also saw the emergence of new CT service providers. Most of the new entrants have their origin in the logistics and forwarding business and the majority of them used to be customers of CT operators. As already indicated under section 4.2., some of the new entrants were motivated by securing or stimulating their core business. This is the case of as ECT or Eurogate. Shippers like the Spanish construction companies COMSA and Dragonas, on the other hand, have taken the opportunity of a liberalized rail access to establish a railway undertaking, in the first stage, and then moved into the CT business.

What can be taken from this development is that the intermodal industry is considered by many companies as a market offering an attractive growth potential and good business opportunities.

### **Continuous need for restructuring domestic combined transport systems**

In many European countries, domestic combined transport systems particularly if designed for continental traffic have been economically fragile. Owing to comparatively short transport distances and a lack of trade lanes adequate for full trainload volumes, they often ran into the following vicious circle: In order to serve less-than-trainload domestic routes, rail operational schemes were implemented, which allowed to bundle intermodal units en route. Intermodal shipments were carried on liner trains, in systems where wagon groups were exchanged between trains meeting in a station or shunting yard, or in single-wagon systems in conjunction with conventional wagons. Those consolidation systems did fairly well as concerns competitiveness with road as long as freight transport in Europe was regulated and

governed by tariffs and quota. With an increasingly liberalized road freight market in the 1990's, domestic CT services became more and more inefficient and matched the requirements of shippers and logistic service providers with increasing difficulty. As a result most railways were faced with considerable deficits arising from CT business. But when they attempted to achieve a viable situation and raised freight rates or cut down services, customers shifted so much volume back to road that the financial situation worsened.

Stuck in such a dilemma, in the late 1990s, several railways often in co-operation with national CT operators undertook a complete re-engineering of the domestic CT system such as in Germany, Norway, or the UK. The production of CT services was transformed into more efficient direct and shuttle trains or less complex bundling systems such as Y-shuttles. This, however, called for reducing the network and giving up many low-volume trade lanes. The changes in the commercial conditions were at least as drastic. Either the railways took over the entire commercial responsibility and marketed the train capacity on their own account, or this was passed on to the combined transport operators.

Lately, actors have made an attempt to put domestic CT services on a more solid footing. In **France**, since 2009, the Government has authorised the creation of OFPs (Opérateurs ferroviaires de proximité), a kind of short-line railway undertaking, OFPs take over regional and local routes that SNCF Fret has retreated from and thus contribute to a revitalization both of conventional and intermodal freight services in France. So far this structure has encouraged two new domestic CT services. Since 2010 CombiWest – an affiliate of a farmers' cooperative in Brittany – is operating the line Rennes-Lyon, and, in 2012, the OFP Ferovergne launched a service between Le Havre and Clermont-Ferrand.

In **Austria**, domestic CT had been fully integrated operationally into the single-wagon system, which allowed to serve any terminal and possible national trade lane. In April 2011, Rail Cargo Austria (RCA) inaugurated a system of dedicated domestic CT trains under the brand name of NINA (National Intermodal Network Austria). Based on the hub terminal in Wels, NINA is linking the most important economic areas with overnight services at fixed schedules.

The domestic CT system in **Switzerland** operated by SBB Cargo resembled very much the Austrian one. SBB Cargo now envisages to implement dedicated CT liner trains between the most important Swiss centres featuring shuttle services with defined schedules and interim terminal stops. If the market potential is there, trade lanes shall be served by two or more daily trains, overnight and even daytime.

### Rail traction services getting into focus

In recent years, rail traction services have become an even more strategic issue in combined transport than ever.

More and more CT service providers extend their value chain to train operating services. Either they establish a railway undertaking of their own and apply for a licence like GTS or Kombiverkehr, or they conclude a joint venture with other partners. Examples for the latter approach are Hupac forming SBB Cargo International together with SBB Cargo, and Sogemar's venture with TPER (Trasporto Passegeri Emilia-Romagna) to establish the railway Oceanogate. The motives for such a move are twofold. The CT company takes over operations in order to improve the reliability of its services. More generally, CT service providers seek to gain more control on critical resources and become less dependent from large railway undertakings.

A similar motivation has driven GTS, LKW Walter, MSC, and Bertschi - both suppliers and users of CT services - to buy shares in Crossrail. They hereby wish to strengthen this "independent" railway undertaking and maintain a counterweight to incumbent railways.

### Interest in CT services with Russia and the Far East growing

Ultra-long railway connections operate very successfully in various parts of the world: for example in North America and the Russian Federation. However, Eurasian container transport could also represent an attractive business opportunity for rail freight companies and other logistics service providers. Back in the 1980s, almost 200,000 TEU a year were already being transported between Europe and Japan via the Trans-Siberian Railway. For this reason in particular, Russian Railways, the Chinese Ministry of Railways, Deutsche Bahn and a whole host of carriers and specialist operators are now making great efforts to revive this market.

In 2011, the ICOMOD study of UIC, commissioned from Roland Berger Consultancy, developed a market model that identifies available routes, analyses the prerequisites for success and details specific improvement measures. The outcome of the study highlighted that in order to be successful, the rail sector must focus on the niche markets in which it has a competitive advantage and thereby avoid direct confrontation with the large capacities transported by sea.

Container transport between the European Union and Asia (excluding Southeast Asia) stood at 10.7 million TEU in 2009 (calculations based on EUROSTAT data). Of this total, only around 140,000 TEU travelled by rail, therefore significantly less than via expensive air freight.

Based on a forecast growth rate of 3.7% per year, the market would increase to 17.4 million TEU in 2020 and then to 22.7 million TEU in 2030.

Assuming that railway products can be improved with regard to important criteria, a market share of 5 to 6% seems achievable, which translates to almost half a million TEU a year, or 20 trains a day. By the year 2030, this potential would grow to almost 1 million TEU. This prediction assumes a growth figure of 3.3% a year, which is slightly below average for the market.

Not included in these figures, but seemingly achievable, are certain market-share gains from air freight, which are much smaller in volume, but also less price sensitive than the gains from sea transport. One negative aspect of this very encouraging outlook is the imbalance of the traffic flow with a majority of the traffic (54%) coming from Asia to Europe. This is expected to increase to 64% by 2030.

### **A sustainable trend for sustainable logistics**

The increasing awareness of a global climate change has made many shippers examine how they could reduce their emissions of green house gases (GHG). Since the transport industry in general is one of the largest polluter it was understandable that the shippers also started looking into their supply chain logistics. When they finished their environmental balance sheet it may have come as a surprise to some companies, which heavily relied on road in land transport, that they could considerably improve their ecological performance by shifting from road to rail or barge.

As a result, more and more shippers are keen to reduce their “environmental footprint” and increasingly request from their logistics service providers to contribute to the reduction of GHG emissions in distribution and/or procuring logistics. Some manufacturers and retailers even are set to define modal split objectives and pursue a rather stringent modal shift policy. Among them are chemical companies such as BASF or Bayer, manufacturers of fast moving consumer goods like Procter & Gamble, Nestlé and Danone, or retailers, for example, Tesco, Rewe, ICA, Edeka or Carrefour. As it turned out, most shippers as well as their forwarders considered combined rail/road transport as the most appropriate instrument for achieving the environmental goals. We can therefore observe that in the past few years a couple of new CT services have been inaugurated, which are entirely dedicated to serve a single shipper or where the shipper supplies the “base volume” (30 to 50% of the train capacity). Additionally, CT service providers operating multi-user services experience an increasing demand from forwarders that deliver the logistics especially for manufacturers of consumer goods, which seek to shift freight from road to rail but don't have sufficient shipments for initiating a CT service on their own.

Meanwhile the demand for sustainable logistics lasts for many years, and there are no signs why the trend may falter. This is confirmed by this year's survey among CT service providers

(see section 8.). According to many shippers and logistic service providers the request for more eco-efficient freight transport is expected to increase in the coming years.

The key driving forces are:

- Consumers increasingly require for „green“ products and this request is due to extend to logistics as well.
- As a consequence retailers are obliged to commit to “green” logistics and refer this request to their suppliers.
- Pressure from investors, rating agencies and insurance companies on manufacturers to reduce GHG emissions with an aim to fight climate change.
- Many shippers with large volumes have an additional motivation to shift volumes. They anticipate that, in the long-term, road transport will become more expensive and motorways increasingly congested and therefore wish to “secure” rail transport capacity, today, and spread the risks among various modes of transport.

In spite of this sustainable demand for CT services CT operators, railway undertakings and other providers of intermodal supply services should make no mistake about one aspect. Shippers generally are not prepared to pay a premium for sustainable logistics or accept a markdown of the service level compared to what road can deliver.

### **Price competition accelerated again**

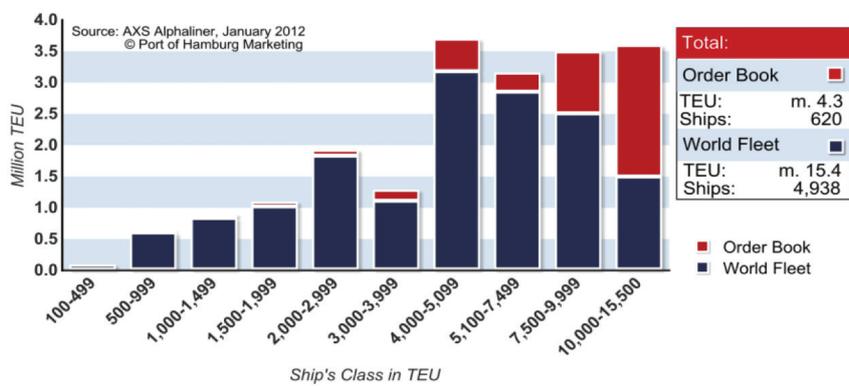
During the economic boom from 2006 to 2008 road freight rates had substantially climbed the first time for almost 20 years. After the economic downturn in 2008 market prices slumped until they partly recovered in 2010. This trend reversed again in late 2011. Following a weakening of the European economy road transport capacities have exceeded the demand on most corridors and reinforced the downward movement of freight rates in spite of raising costs for inputs like diesel.

Virtually over the entire year 2012 continental CT services consequently faced a fierce and accelerated competition with low-cost road operators on many international trade lanes. Operators report that they could not prevent losing shipments since their own cost basis didn't allow to reduce prices to the extent required. This also applied to rail-based maritime transport especially on routes with Central and Eastern European countries.

Maritime services, both on domestic & international route, have also suffered from a fierce competition in container liner shipping, which resulted from structural overcapacities, a struggle for gaining market shares at the expense of profits, and volatile sea freight rates. In order to – at least partly - compensate for losses incurred on sea freight rates shipping lines

have put pressure on the operators of hinterland transport. If CT operators were not prepared to or capable to comply with these requirements they lost container volumes. Observers of the global container market are concerned that, in the medium-term, the price competition will not ease but be reinforced with the deployment of Ultra Large Container Vessels (ULCV) (see Figure 6-1). The world's largest container line Maersk now has even ordered ten vessels with a capacity of some 18,000 TEU and it is expected that other major vessel operators will follow.

**Figure 6-1: World fleet and order book of container vessels by 2015**

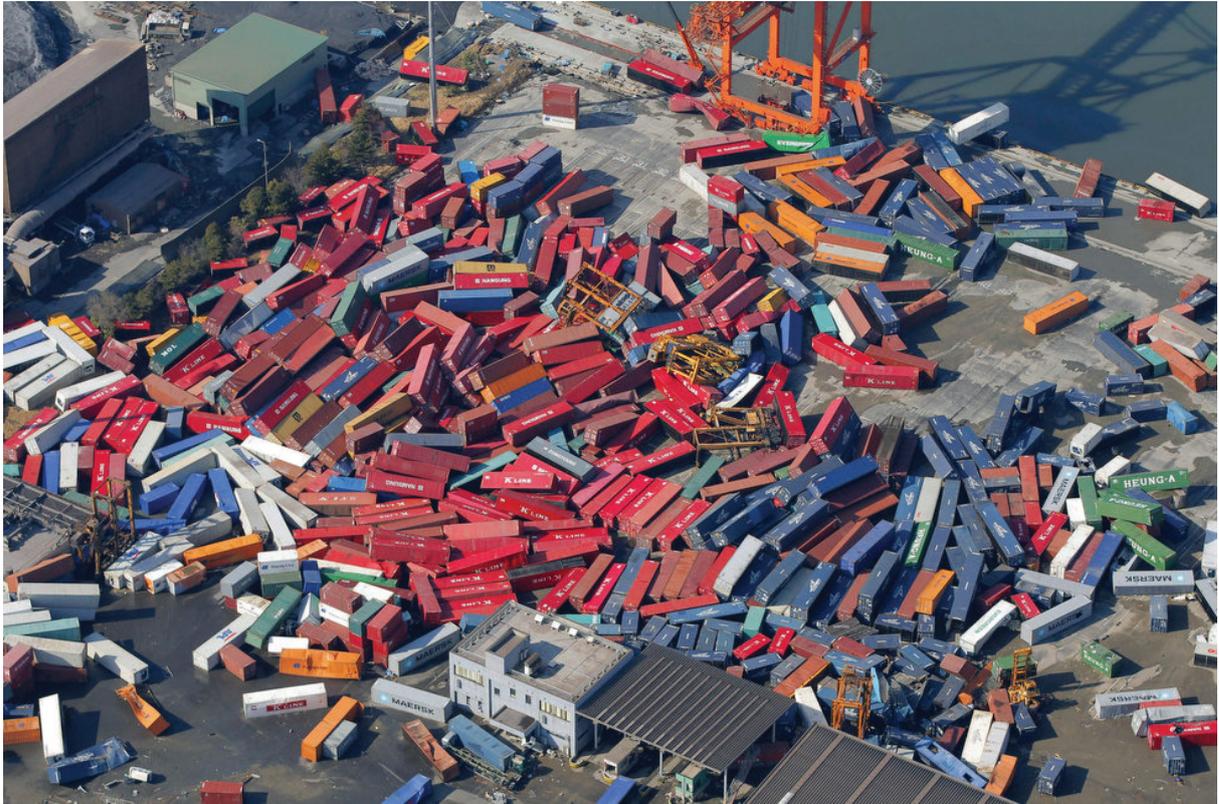


Source: Port of Hamburg Marketing based on Alpha Liner data

### Vulnerable supply chains

In the past three years mankind was confronted with several serious natural disasters such as the eruptions of volcanoes in Iceland and New Zealand, tremendous floods in Thailand, and, in particular, the earthquake off the coast of Japan and the consequential tsunami and melt-down of an atomic power station (see Figure 6-2). In every case global supply chains of essential inputs for other manufacturing industries or the production of critical components itself were heavily disrupted for days or even weeks. Often the impacts of the natural disaster were amplified by man-made failures and/or a lack of contingency planning and back-up solutions.

**Figure 6-2:** Japanese container port after the impact of the 2011 tsunami

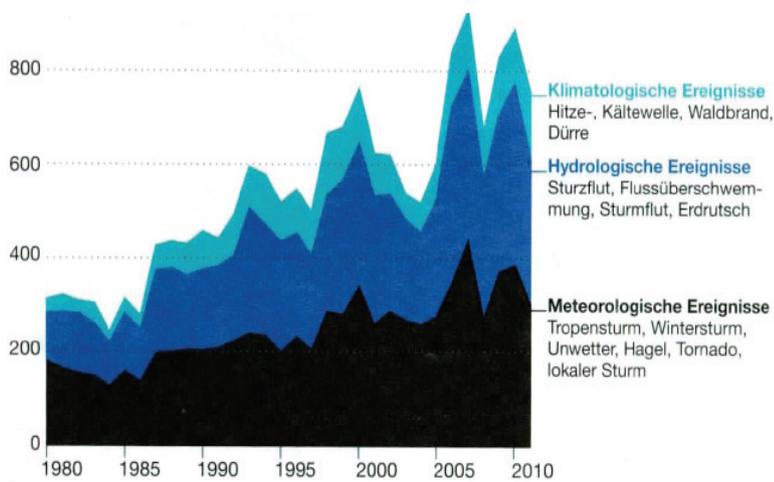


Source: Internet

In order to highlight the vulnerability of today's logistics it is not necessary to examine incidents of a global character. On a smaller scale, the European logistics industry and also CT services have encountered similar difficulties. From mid-January to mid-February 2011, the middle and upper river Rhein could not be navigated as the barge 'Waldhof' had collapsed and laid across the river. In June 2012, a landslide north of the Gotthard tunnel blocked one of the three main transalpine rail crossings for nearly one month. What worsened the situation and led to a massive impediment for CT services was that at the same day the Benner rail line, the other key transalpine corridor, had been completely closed for maintenance and repair.

The accumulation of those incidents in a fairly short period of time must spur the question whether they were random or indicate a real increase of natural disasters. Have supply chains really become more vulnerable or has our awareness of the vulnerability of supply chains just increased?

Figure 6-3: Number of annual natural disasters, 1980-2011



Source: manager magazin n° 6/2012 based on Munich Re data

Today, nobody is in a position to give a definite answer. Yet according to the statistics of the world-leading re-insurance companies which cover a great proportion of the costs of natural disasters, both the annual number of occurrence and their impact measured in the average total cost per incident has grown over the past decades (see Figure 6-3).

## 6.2. Infrastructure

### Important line infrastructure improvements

As the rail network in **Spain** has a wider gauge of 1668mm than the UIC standard intermodal units moved from and to Spain always had to be either transhipped or undergo an axle change. Since December 2010, CT trains serving the Mediterranean in Spain can cross the French-Spanish border seamlessly using the new rail line between Perpignan and Barcelona. The line which was built according to the UIC gauge and designed primarily to accommodate high-speed passenger trains is now open for a limited number of rail freight services. For the time being, only the intermodal terminal Morrot located in the port of Barcelona is connected to the line. The Spanish Government, however, plans to extend it to Tarragona and Valencia, eventually. Among the first rail freight services using this opportunity were Hupac launching a CT train from/to Antwerpen, and Naviland Cargo linking Barcelona with Lyon. Then, in October 2012, Kombiverkehr implemented a shuttle service between Ludwigshafen and Barcelona.

Regular European CT trains can't run on the infrastructure in the **United Kingdom** due to network profile specificities. The only section compatible with the continental rail network, is the High Speed 1 (HS1) linking London with the Channel tunnel. Until November 2011 HS1 was only used by passenger trains. Since, DB Schenker Rail (UK) achieved a major breakthrough by introducing a regular continental-sized CT train service between Barking (London) and Wroclaw in Southwest Poland.

The Fréjus tunnel, a main rail link between **France** and **Italy**, has been cleared for moving 4m high semi-trailers. This is a huge improvement for the Aiton-Orbassano service of VHA-AFA, which is using the Modalohr technology to ship both unaccompanied semi-trailers and full articulated vehicles.

### Major maintenance works on Brenner rail corridor

On the Austrian section of the Brenner rail line major maintenance and repair works had become necessary. When the planning started concern among CT service providers and railways arose that the entire corridor could be closed for months or capacity substantially reduced over years. In order to mitigate the impacts on one of the key transalpine rail freight corridors ÖBB Netz, responsible for the rail infrastructure in question, negotiated a project schedule with the railway undertakings affected. According to this plan the Brenner line was completely closed from August 6<sup>th</sup> to September 10<sup>th</sup>, 2012. Additionally, single-track traffic and temporary closings over weekends were enforced between June 11<sup>th</sup> and August 5<sup>th</sup> as well as in the period from September 11<sup>th</sup> to 30<sup>th</sup>.

Apart from the period when the line was fully blocked, all CT services, which were usually operated via the Brenner corridor from/to Italy, could be maintained. This was achieved by temporarily re-routing them over the Tauern line through Austria or via the Swiss transit corridors, Gotthard and Lötschberg. This led to extended transit times and increased operational costs for railways, CT service providers and customers although stakeholder cooperation ensured limited drawbacks. On October 1<sup>st</sup>, 2012, the Brenner rail corridor was fully available again as planned.

### More terminal handling capacity for European CT

During the reporting period many existing intermodal terminals have been enlarged and several new facilities were built. This report will highlight two types of investments.

- Developments which have created a considerable increase of handling capacities in areas that are “gravity centres” of European CT and where capacities have been notoriously constrained. The main investment measures identified and the date of completion are given below:
  - Belgium. Hupac (2010) and BASF (2010) –the Combinant terminal - have invested in two new CT facilities in Antwerpen. Both have an annual handling capacity for about 150,000 intermodal units.
  - Germany. DB Netz is about to enlarge its three largest CT terminals by a third handling module creating approximately 50% more capacity at each site. Works in München-Riem (2011) and Hamburg-Billwerder (2012) have been completed, the expansion of Köln-Eifeltor is due to be terminated in 2013. The BASF terminal in Ludwigshafen has also been enlarged by a third handling module. It went into operation in September 2012 raising the total annual handling capacity from about 300,000 to more than 500,000 units.

- Italy. A new terminal providing for a capacity to handle some 150,000 units per year has been inaugurated in Mortara (2009). The majority shareholder of the site located in the Greater Milano area near Pavia is Polo Logistico Integrato die Mortara.
- Developments in areas, which had been suffering from a poor infrastructure and where efficient CT terminals are a key prerequisite for establishing competitive services. In this respect a huge progress has been made in the following countries:
  - Bulgaria. The first modern intermodal facility in Bulgaria started operations in autumn 2011. Located in Sofia-Yana the terminal, in its start-up configuration, can handle about 35,000 units per year. The project has been completed by Ecometal whose core business is the trading of recycling materials.
  - Poland. The Hamburg sea container terminal operator HHLA has invested into two state-of-the-art CT terminals in Poland. Dabrowa Górnicza near Katowice opened in autumn 2010, and one year later the terminal in Poznan. Polzug, the leading operator of maritime CT services on the corridor between Germany and Poland, is managing both facilities. September 2011 also saw the inauguration of a new terminal in Kutno, about 130 km west of Warszawa. It was built and will be operated by the Polish CT service provider PCC Intermodal. Each of the three facilities is estimated to have an annual handling capacity of some 60,000 units in the current stage of development.
  - Romania. The terminal situation in this country is also improving continuously. Following the opening of a first state-of-the art intermodal site in Arad the terminal Ploiesti opened its doors end of 2011. The facility providing for two tracks of about 400m length in the start-up phase is located in one of the main industrial centres of Romania. The terminal management has been outsourced from the investor, the Belgian real estate company Alinso, to Rail Cargo Austria. Around the same time another new intermodal terminal has been established by the UK logistics service provider Tibbett Logistics in the Romanian capital Bucuresti. According to Tibbett it is open to all operators.

### **Further infrastructure managers take over state railway terminals from operating companies**

According to EU regulation infrastructure and freight operations must be separated within state-owned railways. This also relates to CT terminals. Therefore public terminals had already been handed over to the national infrastructure managers (IM), for example, in France, Germany, Italy or Spain. In 2011, the separation process has been executed in Denmark and Sweden. State-owned terminals have been taken over by Banedanmark, the Danish IM, and Jernhusen, the Swedish IM, respectively.

## 6.3. Policy and regulatory measures

### **Ambitious but reasonable objectives of EU White Paper**

The new White Paper of the European Commission “Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system” was published on March 28<sup>th</sup>, 2011. It describes the objectives and the envisaged measures of the Commission’s transport policy in the years to come. The general guideline of the White Paper is how the EU could reconcile the trade-off between the desirable growth of the economy and the resulting increase of freight and passenger traffic, with the need to reduce energy consumption and CO<sub>2</sub> and other GHG emissions.

The Commission’s roadmap to a more sustainable European transport system is based on ten key goals. Three of them immediately are also related to combined rail/road transport, some others at least indirectly. These are the three objectives concerning CT:

- 30% of road freight over 300 km should shift to other modes such as rail or waterborne transport by 2030, and more than 50% by 2050, facilitated by efficient and green freight corridors. To meet this goal will also require appropriate infrastructure to be developed (goal 3).
- A fully functional and EU-wide multimodal TEN-T ‘core network’ by 2030, with a high quality and capacity network by 2050 and a corresponding set of information services (goal 5).
- By 2050, connect all core network airports to the rail network, preferably high-speed; ensure that all core seaports are sufficiently connected to the rail freight and, where possible, inland waterway system (goal 6).

These policy objectives are very ambitious. Yet, considering the time horizon for fulfilment they appear to be fairly reasonable. From the standpoint of the CT industry goal (3) is of particular importance since the precise modal shift objective indicates a – at least partly – turning away of the Commission’s previous indecisiveness in the mid-term review of the 2001 White Paper on transport, coined in the word “co-modality”.

The stakeholders of the European CT industry certainly are prepared to contribute substantially to achieving this objective. But there are two fundamental prerequisites. First, they require for a stable regulatory framework, which enables to calculate the risks of long-term investments into CT infrastructure (terminals) as well as CT and rail equipment – that are modern, resource-efficient and environmental-friendly wagons, loading units, and locomotives. The most important components of a stable framework are the keeping of the existing weights and dimensions for heavy goods vehicles (see section below), the harmonization of the rules governing CT services in EU Member States, and the fair allocation of external costs to all modes of transport.

The second prerequisite for a successful modal shift policy is – as the Commission has recognized – the elimination of existing infrastructure bottlenecks and the provision of an appropriate transport infrastructure in terms of quantity and quality. And this is most likely the weakest point of the White Paper. According to Commission’s estimations more than €500bn would be necessary to only complete the envisaged “core network” of the TEN-T (Trans-European transport network) by 2030 and about €1,500bn to realize the “comprehensive network”. The total envisaged EU money for this period is just €31bn corresponding to 6% of the financial needs. Since virtually any Member State suffers from budget constraints the EU co-financing capabilities are much too small to deliver an incentive to national governments investing in infrastructure projects, which are not anyway on their agenda. And, unfortunately, these are in most cases not investments in freight-related infrastructure.

The conclusion, which can be drawn from the analysis of the White Paper, is that the Commission overwhelmingly has set the right objectives but it is questionable if the necessary means can be supplied to turn political will into reality.

### **No certainty on evolution of HGV weights and dimensions**

For six years now, the European Commission has examined whether the Directive 96/53/EC governing the weights and dimensions of heavy good vehicles (HGV) in EU international road transport should be revised but no decision has been reached yet.

Several studies commissioned by the EC haven’t delivered clear evidence in one way or the other what impacts outweigh others. The stakeholders in the freight and logistics industry also have different opinions. The majority of representatives of shippers and forwarders and road hauliers in many countries call for an increase of HGV weights and dimensions while virtually the entire rail freight and intermodal business and also a minority of road operators are strongly against any change. This division of interest continues on the level of the EU Member States. There are likely as many national government that strongly support a revision of the Directive as are opposed. Ultimately, a political decision is required to calm the situation and ensure a clear and stable regulatory framework.

In the meantime some Member States have taken initiatives with respect to this issue,:

- Denmark’s step to raise the maximum gross weight for domestic road transport to 54t was not such spectacular as the country already had allowed eight tonnes more than the EU standard of 40t. In contrast to that, the decision of the French government to increase the general weight limit to 44t is likely to counteract to the political objective strengthening rail freight and shifting freight off the road.

- The Netherlands have again extended the period for authorizing 25m/60t mega-trucks. Observers suggest that ultimately the exception will become the rule and be transformed into a regular legal provision.
- Germany has started a multi-annual trial of mega-trucks on 1 January 2012. It is intended for collecting evidence on the safety record of larger vehicles, the impacts on infrastructure and on the competition with rail, inland waterway and CT. When the results are evaluated the government will decide whether the current code shall be modified. Other than in the Netherlands, participants can only use longer truck versions up to 25,25m while the existing weight limits of 40t for road-only and 44t for intermodal journeys must be complied with. Interestingly, the special regulation on this field test stipulates that the mega-trucks must carry or pull intermodal loading units. Owing to the comprehensive technical requirements for longer trucks, for the time being, only some twenty vehicles have been deployed.
- The British government has authorized trials on longer semi-trailers up to 15.65m (+2.05m) in length. A total of 1,800 so-called high volume trailers can participate in this test, 50% of them not longer than 14.6m (+1.0m). All vehicles must conform to the current maximum weight limitation of 44t.

In the first half of 2012, the EU Commissioner for Transport, Mr Kallas, provoked irritation when he conveyed his opinion that without a change of Directive 96/53/EC two or Member States could allow the cross-border use of mega trucks between their countries. Many stakeholders in the rail industry as well as distinctive Members of the European Parliament criticized this statement as a misinterpretation of the Directive and it was emphasize that this could end up with mega truck corridors competing head on with rail. Meanwhile Mr Kallas doesn't seem to follow up this matter but the CT and rail industry must watch out for any such initiatives of Member States or the EU.

### **Allocation of external costs of road transport**

On September 12<sup>th</sup>, 2011, the EU Council has agreed on a compromise established with the European Parliament on the revision of the so-called Eurovignette Directive. This Directive 1999/62/EC on charging HGVs for the use of infrastructure – through time- or distance-based charges - was originally adopted in 1999. An amendment was adopted in 2006 with the Directive 2006/38/EC. The main changes of the revision of the Eurovignette Directive are as follows:

- It will allow EU Member States to calculate road user charges based not only on infrastructure costs but also on the cost of air pollution and noise. Hereby the user or

polluter pay principle shall come into force whereas the previous Directive explicitly prohibited the allocation of external costs.

- With an aim to decongest roads it will enable Member States a wider differentiation of road tolls by applying higher charges of up to 175% above the average tariff during peak times and reduced rates during off-peak periods.
- The scope of the Directive has been extended. Member States are allowed to levy a road toll on all motorways and not only on the TEN-T network.
- The Member States can earmark revenues from tolls for investments in a more sustainable transport system and 15% of the entire revenues into TEN-T projects.

The revision of the Eurovignette Directive, which Member States will have to transpose in their national law until October 2013, certainly is a progress in ensuring a fair and efficient internalization of external costs. What is critical, on the other side, is that, first of all, the Directive authorizes Member States to apply the rules but does not force them to do so. Secondly, critics complain that the supplements allowed to cover the external costs of road transport (3-4 ct/km) are extremely low and don't reflect the real costs. So the progress of the revised Directive may be considered small. The main step forward is that a system of rules now exists which can be improved.

### **Judgment of Court of Justice hits accompanied transport through Austria**

On 21 December 2011, the European Court of Justice declared that the regulation "Sectoral traffic prohibition for lorries of over 7.5 tonnes carrying certain goods on the A 12 motorway" adopted by the Austrian province of Tirol violates the European law. According to the judgement Austria has failed to fulfil its obligations under Articles 28 EC and 29 EC, which requires from Member States to ensure the free movement of goods.

The regulation originally entered into force on 1 January 2008 stipulated a traffic prohibition for road vehicles over 7.5t moving certain types of goods on the A 12 motorway between the Austrian-German border and Zirl, west of Innsbruck. It had been adopted to reduce the air pollution caused by heavy trucks.

During its validity the regulation had obliged road hauliers to look for alternatives in transit traffic through Austria. Quite a great number had chosen to use the rolling highway services supplied by Ökombi: Wörgl-Brenner; Wörgl-Trento; Regensburg-Trento. As a result, the volume of accompanied shipments soared on these routes. Now the annulment of the sectoral traffic prohibition has released an enormous decline of rolling highway transport on this corridor. Ökombi reported that within four months customers shifted 50% of the new volumes back to the road.

## Recent developments on CT assistance programmes

Combined transport has always received a lot of “mental” or political support across Europe. If it comes to financial support or to supply an appropriate regulatory framework the results turn out to be significantly smaller. In particular, there are only a few European countries, which have established permanent, sustainable assistance programmes and do earmark a reasonable budget for it. Considering some developments in the past years it even raises concern whether those instruments will be continued at all and provided with a sufficient budget to match the envisaged objectives. An overview of recent country-related activities in this respect is presented in the following:

- Austria. The government is scheduled to reduce the size of operational subsidies that railway undertakings obtain for carrying CT shipments. According to the latest news, however, the reductions for the majority of unaccompanied CT services don't appear to jeopardize the competitiveness considerably.
- Belgium. The existing financial scheme for primarily maintaining the supply of domestic CT services and assist the start-up phase of new international lanes will expire in 2013. It is not known if a new programme will be implemented.
- Germany. A new “Directive on the funding of the construction of CT terminals”, first implemented in 1998 to support private undertakings in investing into public terminals, has successfully been notified by the Commission. It went into force on 1 January 2012 and is valid until end-2015. Investors can receive a funding of up to 80% of the eligible costs.
- Poland. The government is starting to spend money of the EU cohesion funds on transport infrastructure projects like the building or modernization of CT terminals.
- Switzerland. The Swiss Eidgenossenschaft had planned to reduce the scale of funding of transalpine unaccompanied CT services, which currently is high compared to EU Member States. Since, however, the mid-term mode shift objective (“Verlagerungsziel”) – limiting the number of trucks transiting Switzerland to one million by 2011 – wasn't achieved what makes the long-term objective – a reduction of trucks to 650,000 by 2018 – not very realistic, the government may tend to re-consider its original intention.
- UK: When the new British government took over administration it announced a considerable cut back of the operational subsidies for domestic CT services. We don't provide for topical information how far this goal has been realized.

## 6.4. Innovations in combined transport

### ILU code

The revised norm CEN 1304 adopted in November 2010 proposed the separation between the ownership code for an intermodal unit and the other parameters. It stipulates a new plate be fitted to the unit with the following parameters: length, width, speed.

Concretely for CT stakeholders buying, deploying or handling European intermodal loading units (ILU) it means that:

- New intermodal swap bodies and semi-trailers will be delivered by the manufacturer fully approved for rail and marked with the compulsory loading gauge (profile) coding. This procedure replaces the previous individual approval and codification process.
- A new regime of ownership marking has been introduced, which is completely compatible with the system governing ISO containers according to the worldwide standard ISO 6346. The so-called ILU code comprises an owner identification code, an individual registration number for every unit and a check digit. While the last character of the owner code for ISO containers is a 'U' other letters have been assigned for European ILUs (see Figure 6-4).
- The owner code must be applied for at the UIRR appointed by EN 13044 as administrator of the ILU code.

The ILU registration process officially started on 1<sup>st</sup> July 2011. Full information can be downloaded from the following link:

<http://www.uirr.com/en/media-centre/leaflet-and-studies/mediacentre/422-new-markings-of-intermodal-loading-units-in-europe.html>

Figure 6-4: ILU identification marking according to EN 13044

Owner-key - Registration number - Check digit ABCA 001234 2	
Owner-key:	Allocation by UIRR or BIC 4th alpha character for type of loading unit <sup>5</sup>
Registration number:	Free allocation by owner
Check digit:	Given calculation procedure

Source: UIRR

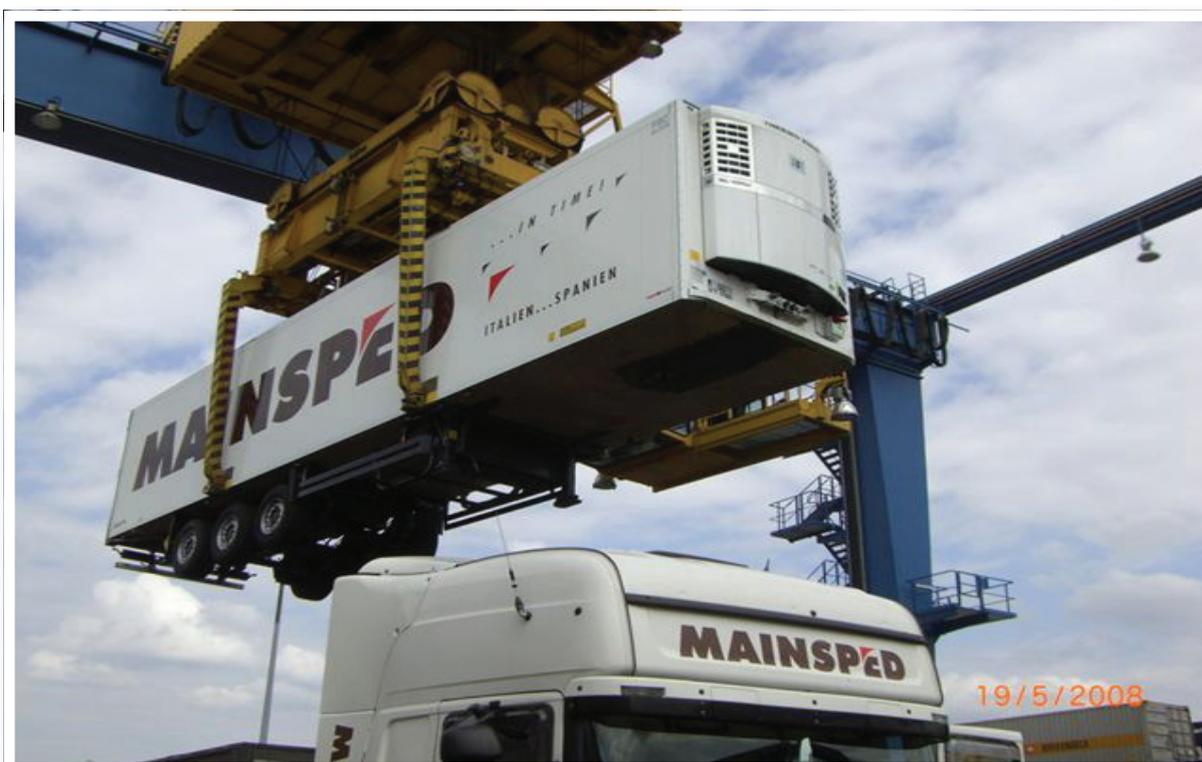
### Technological advancements enable to catch new markets for CT

One of the fastest growing freight markets is the transport of **temperature-control shipments**. The main categories of goods are chemicals, pharmaceuticals, foodstuff, and pet food. Depending on their character the products must be kept deep-frozen, frozen, chilled, warm or even heated during their journey through the supply chain.

Until recently, the majority of temperature-controlled cargoes especially if they didn't allow for any significant variations in temperature were virtually excluded from being carried on CT trains. This was owing to the fact that the loading units employed were used to have no self-sustainable energy supply and there wasn't – and still is not - an efficient technology to provide electricity during the rail transport to drive the loading unit's generator.

Now innovative technologies are available, which enable to serve the market of packed goods required to be shipped under temperature control. These are intermodal thermal semi-trailers (see Figure 6-5) and 45' domestic reefer containers. Both types of equipment have a diesel tank of their own and thus are self-sustaining as concerns the energy supply. Typically they provide for an integrated GPS/GSM module to locate the equipment and have a remote control of the temperature. With these pieces of equipment intermodal customers have captured a substantial slice of the reefer market on many European corridors. Only a few years on the market there are now not many CT trains, which don't move at least one of those units.

*Figure 6-5: Intermodal semi-trailer for transport of temperature-controlled goods*



Source: KTL Kombi-Terminal Ludwigshafen

Another product, which was usually considered to be not “rail-capable”, is glass. Now the forwarding company Lanutti in co-operation with a trailer manufacturer has proven the opposite. They pioneered a technology for making a semi-trailer, which is designed to convey plate glass, liftable and to be put on a standard pocket wagon. Another specialist in plate glass logistics is the forwarder Offergeld that has developed another innovative solution (see Figure 6-6).

One of the main recipients of plate glass is the automotive industry. Therefore an enormous amount of plate glass is moved between the few European manufacturer and the car plants. The market potential for CT services consequently is huge.

*Figure 6-6: Intermodal semi-trailer for plate glass transport*



Source: KombiConsult

### **Metrans container flatcar optimizing rail infrastructure parameters**

The 80' articulated container flatcar is increasingly becoming the “standard” wagon in European maritime services. In order to raise the loading capacity of a train within the limitation of the given infrastructure Metrans, the leading CT service provider on the corridor between the German sea ports and the Czech Republic and Slovakia was on a wagon with reduced length and tare weight. The Slovakian wagon manufacturer Tatravagonka was able to match Metrans' request. The optimized 80' container flatcar Sggrss 567 is 710mm shorter and about 1.5 tonnes lighter than other 80' wagons conforming to UIC standard.

## 7. Outlook for the evolution of unaccompanied CT and expectations of market and policy trends

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The survey carried in the framework of this Report included questions on intermodal service providers' expectations regarding the development of their volumes in the years to come. Additionally, participants were asked to for their assessment of several trends in the supply and demand for CT services and developments in transport policy. The results are presented in section 7.3.

### 7.1. Outlook for the evolution of unaccompanied CT until 2015

It has to be noted that the survey was carried out between May and September 2012, against a difficult economic background worldwide and Euro zone. The demand for freight transport was stagnating or decreasing on most international corridors and domestic transport volumes even slumped in many countries. With a under-utilization of truck capacity, price competition became severe and, in addition to the reduced demand, jeopardized the volumes of CT service providers.

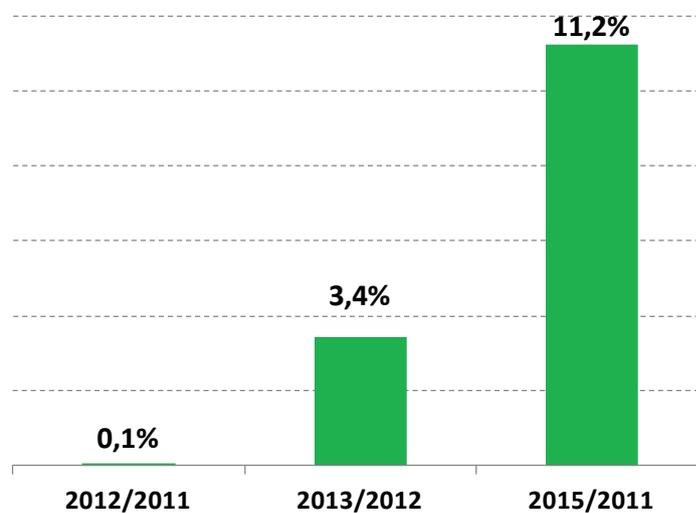
Despite this, CT service providers were not particularly pessimistic about the short-term evolution of their business:

- A clear majority of stakeholders expect a moderate growth of their transport volumes between 1 and 5% both for the years 2012 and 2013.
- 70% of all respondents forecast a positive business development in 2012 and even 90% in 2013. This result reflects a glimpse of “hope” - though small – of the CT industry that the economic framework conditions may enhance in the course of 2013. Only three out of 55 companies remain sceptical.
- By weighting the expectation of each CT service provider with its individual volume of unaccompanied CT achieved in 2011 average growth expectations can be derived for the entire industry. It amounts to + 0.1% in 2012 compared to 2011 and a + 3.4% in 2013 against 2012 (see also Figure 7-1).

The outlook of service providers is slightly brighter with respect to the medium term perspectives of their CT activities by the time-horizon 2015. 65% of all respondents even assume that they will witness a double-digit growth. Weighted with the company-specific volume we calculated an expected increase for unaccompanied CT volumes of 11.3% between 2011 and 2015 (see Figure 7-1). This corresponds to an average linear growth rate of 2.8% per year.

It must be emphasized that this is not an ambitious perspective. In the period from 2005 to 2011 the unaccompanied CT in Europe rose by 31.8%. In spite of the extraordinary downturn of volumes during the economic crisis, the CT industry on average achieved an annual linear growth rate of 5.3%. This was nearly twice the increase the CT service providers now expect until 2015. It is therefore more than likely that the lingering economic crisis especially in southern European countries has significantly impacted on the mood and on the medium-term growth expectations.

**Figure 7-1: Expected average increase of unaccompanied CT volumes weighted by volumes of CT service providers**



Source: KombiConsult analysis based on statement of 55 CT service providers

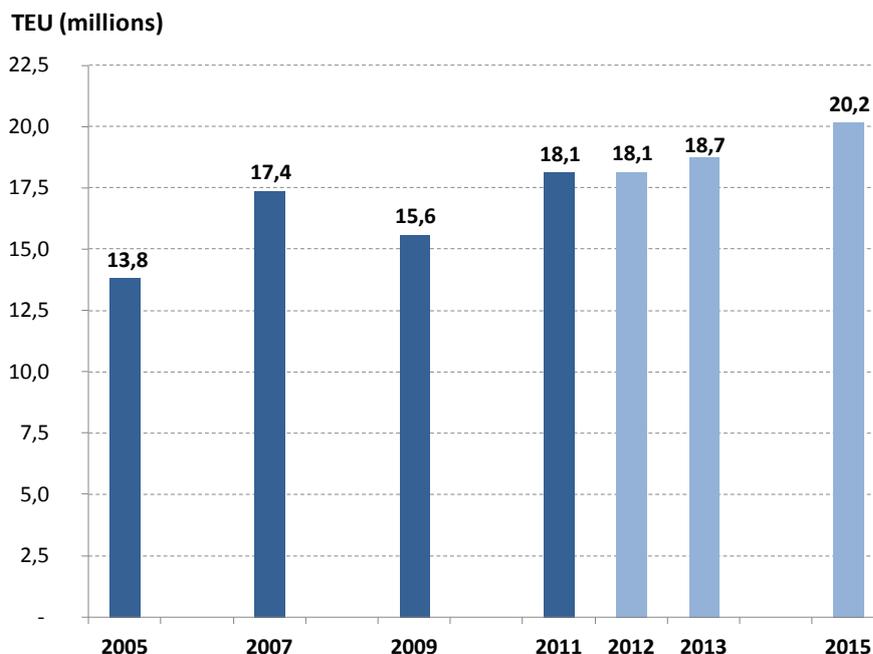
In order to elaborate a projection on the total European unaccompanied CT it was assumed that the results of the survey are representative for the industry. Consequently, the above growth figures have been applied to the 2011 volume of unaccompanied CT in Europe (see chapter 1). This exercise has delivered the following forecast:

- The volume of TEU carried on unaccompanied CT services would stagnate in 2012 at about 18.1 million TEU and then rise to 18.7m TEU in 2013 and 20.2m TEU in the year 2015 (see Figure 7-2).
- The volume of goods moved in unaccompanied CT in 2012 would remain at the 2011 level of 192 million gross tonnes and then moderately increase to 199 million tonnes in 2013 and about 213 million tonnes in 2015 (see Figure 7-3).

If these expectations became true and unaccompanied CT were not able to grow at higher rates the prognosis of the UIC “Agenda for combined transport in Europe” published in January 2008 - prior to the global crisis – would be missed significantly. It was forecasted that unaccompanied CT may rise to 268 million tonnes by 2015.

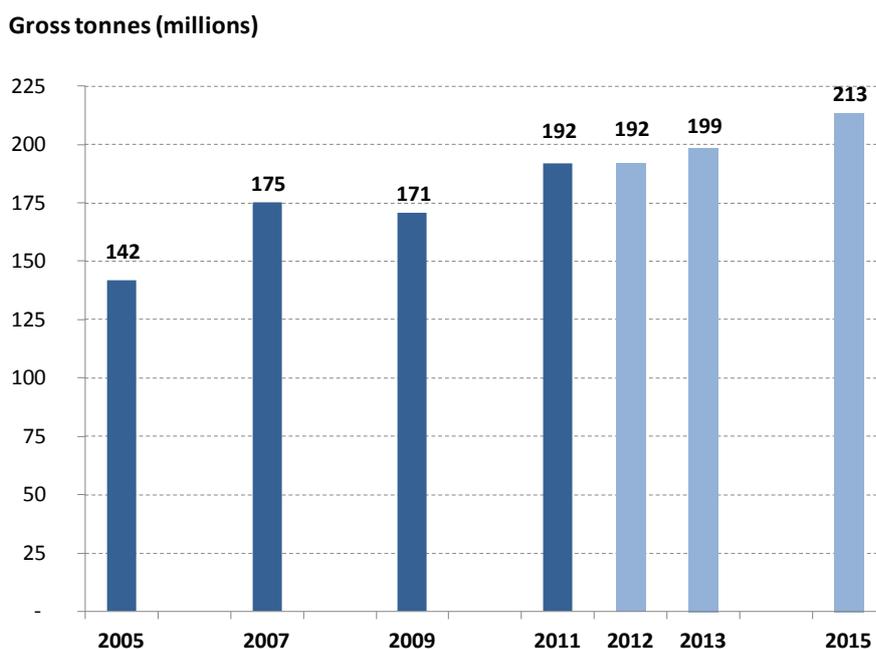
This tonnage would be reached by the year 2020 if the average annual linear growth rate were 4.4% per year instead of 2.8%, and it would be achieved by 2018 if the industry could ensure an average growth rate of 5.3% like in the period from 2005 to 2011.

**Figure 7-2: Forecasted evolution of unaccompanied CT by 2015, TEU carried**



Source: KombiConsult analysis

**Figure 7-3: Forecasted evolution of unaccompanied CT by 2015, goods moved**



Source: KombiConsult analysis

## 7.2. Assessment of market trends and developments of transport policy

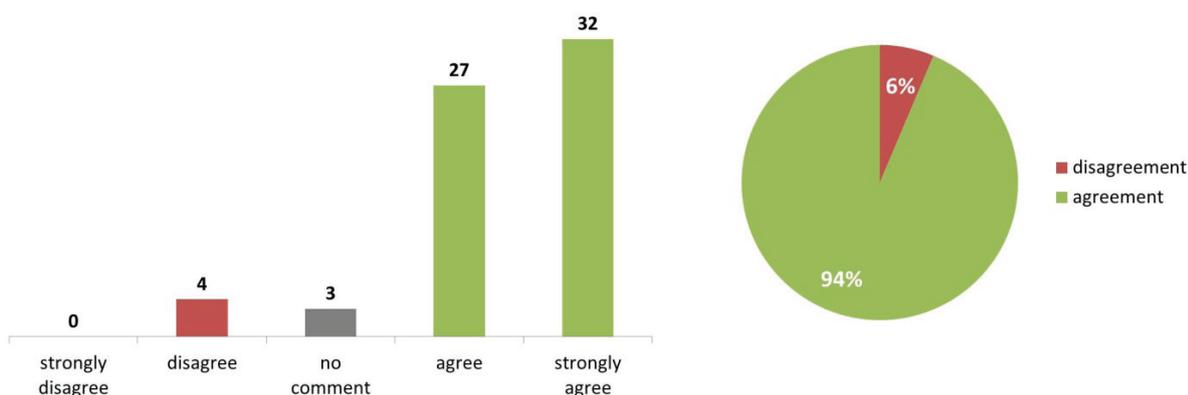
The 2012 survey asked providers' opinion on several statements that relate to:

- Transport policy,
- Trends in the supply and demand for CT services,
- Obstacles to growth.

### Transport policy

The first statements refer to objectives of the most recent EU White Paper on Transport from March 2011. There was a virtually unanimous agreement on the “polluter pays principle” that the **full external costs should be allocated to every mode of transport** (see Figure 7-4).

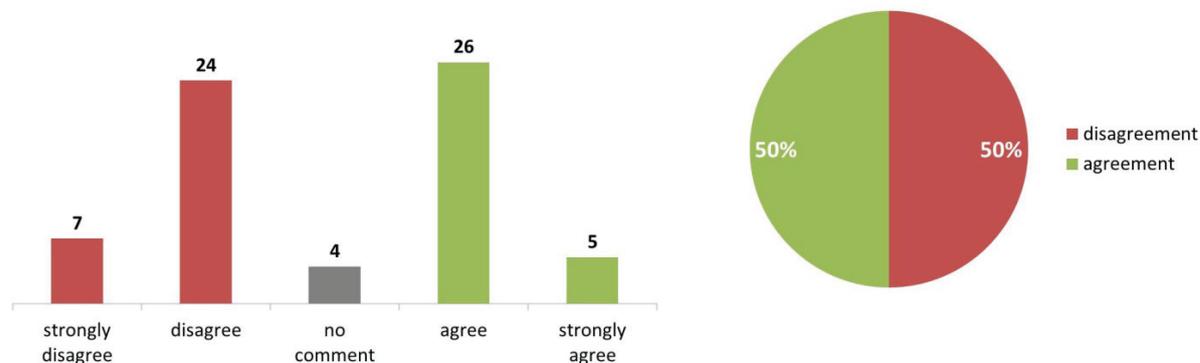
*Figure 7-4: “The full external costs of transport, for example, for green-house gas or noise emissions, should be allocated to each transport mode”*



Source: KombiConsult analysis based on statements of 66 CT service providers

CT service providers, in contrast, are absolutely divided in their opinion of the Commission's goal to **shift 30% of road freight transport over 300km to rail and barge by 2030**. 50% consider it as a realistic objective and 50% don't (see Figure 7-5). The large percentage of disagreement may result from the fact that stakeholders have evaluated this objective from the viewpoint of CT services. Currently the break-even distance between CT and road – depending on the CT sector – is at about 400 to 500 km on domestic and 600 to 700 km on international trade lanes. Against this background the political goal appears to be very ambitious. And this is even more so as it would require for a massive investment into rail and CT infrastructure. Stakeholders don't expect that sufficient money will be made available.

**Figure 7-5: “Shifting 30% of road freight transport over 300km to rail and barge by 2030 is a realistic target”**

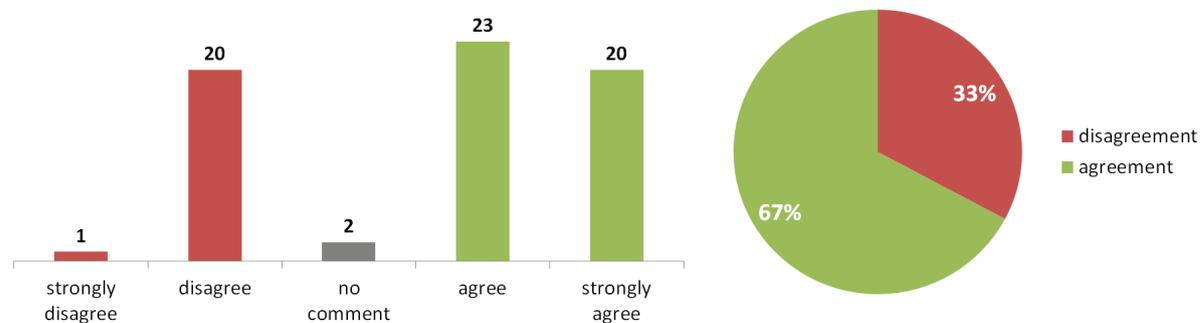


Source: KombiConsult analysis based on statements of 66 CT service providers

**Will the EU increase the weights and/or dimensions of heavy goods vehicles? Will they be confronted with mega trucks that jeopardize existent volumes and decrease the future competitiveness?**

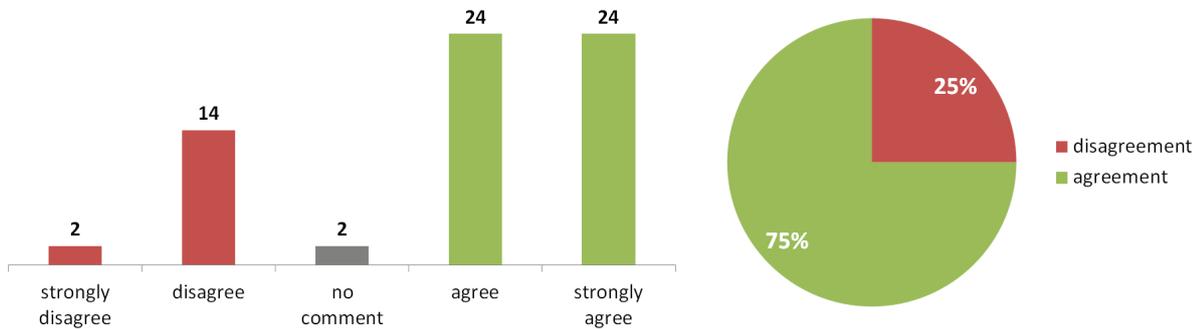
Answers to the questions indicate, first of all, that the majority of CT service providers is very concerned about mega trucks in whatever configuration. About 70% of all companies expect a significant reduction of shipments (see Figure 7-6 and Figure 7-7). Secondly, an increase of the weight limit from 40t to 44t is considered to be a bit more dangerous than an enlargement of road vehicles without a modification of the gross weight. Thirdly, a surprisingly large minority of stakeholders – 25% to 33% - doesn't fear larger and heavier trucks being allowed on the road. These CT service providers must be very confident about the efficiency and competitiveness of their company and services. And, in fact, a large proportion of these respondents were also particularly optimistic about their future growth rates.

**Figure 7-6: “An increase of the maximum permitted length of road vehicles to 25m in the EU will lead to a significant loss of intermodal transport volume”**



Source: KombiConsult analysis based on statements of 66 CT service providers

**Figure 7-7: “An increase of the maximum gross weight of road vehicles to 44 tonnes in the EU will lead to a significant loss of intermodal transport volume”**



Source: KombiConsult analysis based on statements of 66 CT service providers

### Supply of and demand for unaccompanied CT services

The items for which an appreciation was asked concern the performance and the cost of CT services in the reporting period 2011.

#### Reliability

84% of all respondents confirmed that they could have carried substantially more CT shipments if the services had been more reliable. Asked for an estimate about “volumes lost”, CT service providers indicated that on average they might have raised the throughput by 15%.

#### Price level

Some 50% of all CT stakeholders report that they have lost volumes during the year 2012 following an increase of sales prices. This fairly significant percentage can be explained by the fact that during the economic crisis and at the beginning of the recovery, rail traction companies did not increase freight rates and bore alone the cost increases imposed to them. In 2011, when CT volumes went up, prices were adjusted accordingly. Unfortunately, when CT service providers passed the increase to their customers, in 2012, the economy began to slow down again. The price increases were therefore passed on to the market when road rates were declining again.

#### Service development

In spite of the above, a vast majority of CT service providers has remained confident in the system. Eight out of ten companies have already implemented new services in the years 2011 or 2012 and nearly 90% plan to do so in the period up to 2013.

This high percentage also reflects the overall confidence of CT actors in an increasing demand for services – provided that economic recovery.

### Investments

For this reason 72% of the respondents are scheduled to invest into further CT equipment such as wagons, terminal handling equipment and IT.

### Sustainable logistics

The positive outlook for the evolution of unaccompanied CT is also backed by stakeholders' observation that the trend for sustainable logistics is ongoing. CT service providers clearly expect that shippers and forwarders will remain under pressure to reduce their environmental footprint and therefore must design logistics solutions that increasingly integrate CT services. 91% of the companies confirmed this statement.

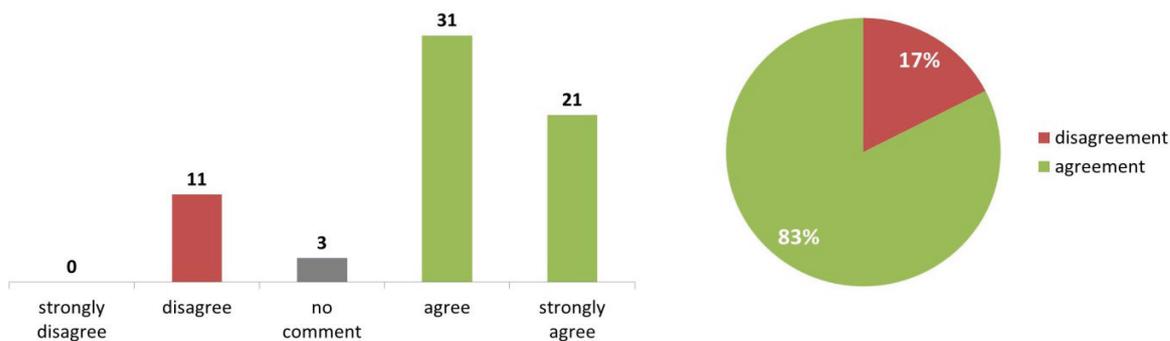
### Obstacles to growth

While the CT actors seem overwhelmingly optimistic about the development of the demand for CT services, most of them are also concerned that the growth potential will be constrained through a shortage of resources.

Approximately 50% of all CT service providers foresee bottlenecks in **wagon** capacity in the period 2012 and 2013. This statement primarily relates to pocket wagons since in recent years the delivery of new pocket wagons could not match the soaring demand resulting from increased needs of logistics service providers to deploy piggyback semi-trailers on continental CT services. In contrast to that there is ample capacity of container flatcars according to rental companies and CT service providers.

Capacity constraints in CT **terminals** also hamper the timely implementation of new CT services according to 50% of all actors asked. But whereas the above two bottlenecks are ad hoc or localised geographically, bottlenecks on the rail network are more widespread and affect the entire industry. This is the opinion of 83% of all stakeholders (see Figure 7-8).

Figure 7-8: "Bottlenecks in train path capacity will increase"



Source: KombiConsult analysis based on statements of 66 CT service providers

## 8. Sea port traffic and maritime transport by rail

### 8.1. Seaborne container throughput of European ports

The vast majority of ports don't publish throughput data regularly, if at all, nor soon after year end. Thanks to a variety of sources most data gaps were closed. The data base presented herewith covers 72 seaports in Europe from 2005 to 2011 (Figure 8-1).

Figure 8-1: Seaborne container throughput of top 40 European ports, 2005-2011 (TEU)

Port	Seaborne container throughput (TEU)						
	2011	2010	2009	2008	2007	2006	2005
Rotterdam	11.876.921	11.147.572	9.743.290	10.830.000	10.790.604	9.653.232	9.288.399
Hamburg	9.014.165	7.895.736	7.007.704	9.737.110	9.889.792	8.861.804	8.087.545
Antwerpen	8.638.311	8.468.475	7.309.639	8.663.736	8.176.614	7.018.799	6.482.029
Bremerhaven	5.915.487	4.888.655	4.579.000	5.448.189	4.892.087	4.444.389	3.743.969
Valencia	4.327.371	4.206.937	3.653.890	3.602.112	3.042.665	2.612.049	2.409.821
Algeciras	3.602.631	2.806.884	3.042.759	3.327.616	3.420.533	3.256.614	3.179.300
Felixstowe	3.400.000	3.400.000	3.021.000	3.132.000	3.300.000	3.080.000	2.760.000
Ambarli	2.686.000	2.540.000	1.836.000	2.262.000	1.940.000	1.446.269	1.186.051
Marsaxlokk	2.360.000	2.371.000	2.260.000	2.330.000	1.900.000	1.485.000	1.321.000
Gioia Tauro	2.338.000	2.852.264	2.857.440	3.467.824	3.445.337	2.938.176	3.208.859
Le Havre	2.215.262	2.358.077	2.240.714	2.488.654	2.638.000	2.137.828	2.118.509
Zeebrugge	2.206.681	2.499.756	2.327.831	2.209.715	2.020.723	1.653.493	1.407.933
Barcelona	2.033.549	1.948.422	1.797.156	2.569.477	2.610.099	2.318.239	2.071.480
Genova	1.847.102	1.758.858	1.533.627	1.766.605	1.855.026	1.657.113	1.624.964
Piräus	1.680.000	863.808	663.000	433.582	1.373.138	1.403.408	1.394.512
Southampton	1.600.000	1.540.000	1.355.000	1.710.000	1.900.000	1.500.306	1.375.000
Marport	1.548.480	1.663.551	1.159.249	1.252.939	798.059	720.603	
Las Palmas	1.357.123	1.187.109	1.073.033	1.429.457	1.449.928	1.438.409	1.303.356
La Spezia	1.307.274	1.285.155	1.046.963	1.246.139	1.187.040	1.136.664	1.024.455
St. Petersburg	1.272.271	1.159.989	938.931	1.072.346	959.032	888.827	722.427
Mersin	1.113.850	1.030.391	843.917	844.632	782.028	643.749	596.289
Marseille	944.047	953.435	882.580	847.651	1.002.879	941.398	905.687
London/Tilbury	890.755	496.409	845.720	1.166.814	843.808	742.679	735.170
Göteborg	886.782	879.611	817.615	862.500	840.550	820.394	787.705
Aarhus	695.000	745.000	682.725	841.000	921.000	856.000	803.000
Izmir		726.675	826.645	895.000	892.217	847.926	784.377
Gdansk	685.643	511.876	240.623	185.661	96.873	78.364	70.014
Constantza	662.796	556.694	595.303	1.380.935	1.411.387	1.037.066	768.099
Livorno	637.798	628.489	592.050	778.864	745.557	657.592	658.506
Gdynia	616.441	485.255	378.340	610.767	614.373	461.170	400.165
Cagliari	613.933	629.340	736.984	307.527	547.336	687.657	639.049
Kotka/Hamina	609.823	512.676	448.739	-	766.292	628.857	542.027
Taranto	604.404	581.936	741.428	786.655	755.934	892.303	716.856
Novorossiysk	598.000	471.400	234.800	381.300	261.000	226.570	161.800
Koper	589.314	476.731	343.165	353.880	305.648	218.970	179.745
Bilbao	572.784	531.457	443.464	557.345	554.557	523.114	503.817
Lisboa	541.906	512.789	500.769	556.062	554.774	512.501	513.061
Napoli	526.768	534.694	515.868	481.521	460.812	444.982	373.706
Leixoes	514.088	483.319	454.143	450.026	433.437	378.387	352.002
Odessa	453.700	351.600	255.461	572.142	523.610	396.433	288.349

Source: KombiConsult analysis

## 8.2. Container hinterland (maritime) transport by rail

In order to determine rail's modal share of maritime transport, two statistical items are required - if the modal split isn't published anyway: the total and the rail-based maritime volume. Since virtually every seaport has a certain percentage of containers being transhipped between sea-going vessels and feeder ships the seaborne container throughput has to be adjusted for the transshipment volume to get the total maritime traffic. Many port authorities consider the amount of transshipment containers as business secret and pay attention that figures are not released.

Despite that the 2012 survey was able to reveal sufficient information and data. Accordingly, the size of transshipment containers varies extremely from port to port. The ports on the Hamburg - Le Havre range feature rather high percentage shares of up to some 30% or more whereas the UK ports or most of the Mediterranean ports have only small or even insignificant numbers of transshipments. Yet there are also some ports in the Mediterranean Sea such as Algeciras, Gioia Tauro or Taranto, which are explicitly designed as transshipment port. They are used to have only a small volume of maritime traffic.

If the collection of statistics on seaborne container throughput is laborious searching for data on maritime transport and the modal share of rail almost means to move mountains. Only a few ports publish both figures directly without requiring for complex calculations. So only owing to KombiConsult's existing data base, the network of contacts and quite some luck to come across valuable sources it was possible to compile a comparatively large amount of statistical data on maritime transport.

Figure 8-2 presents the volume of containers moved on maritime CT services for almost all large European sea ports and many smaller ports. With a few exceptions, for example Valencia, the selection is not primarily a result of the availability of data but rather indicates whether rail plays a role in the hinterland transport of containers of the port in question at all.

By far the biggest "rail-oriented" seaport as concerns the absolute volume is Hamburg. In 2011, 2.1 million TEU were carried on maritime CT services. Bremerhaven with 964,000 TEU and Rotterdam with 813,000 TEU follow on number 2 and 3 of the ranking list.

But if it comes to the market share of rail of maritime Hamburg is still among the leading ports with a modal-split share of rail of 37% but number one is the port of Koper. Some 60% of its hinterland volume is carried by rail. In Bremerhaven rail has gained almost a 50% market share and again ranks on second place among European ports (see Figure 8-3).

Figure 8-2: Seaborne container throughput and maritime transport volume by rail of selected European ports, 2010-2011 (TEU)

Port	Seaborne container throughput		Container carried by rail	
	2011	2010	2011	2010
Rotterdam	11.876.921	11.147.572	813.000	755.000
Hamburg	9.014.165	7.895.736	2.100.000	1.930.000
Antwerpen	8.638.311	8.468.475	700.000	694.600
Bremerhaven	5.915.487	4.888.655	964.000	863.000
Felixstowe	3.400.000	3.400.000	750.000	710.000
Gioia Tauro	2.338.000	2.852.264		95.322
Le Havre	2.215.262	2.358.077	105.000	120.690
Zeebrugge	2.206.681	2.499.756	243.220	265.100
Barcelona	2.033.549	1.948.422	146.700	104.000
Genova	1.847.102	1.758.858		385.100
Southampton	1.600.000	1.540.000	464.000	
La Spezia	1.307.274	1.285.155	330.000	313.945
Marseille	944.047	953.435	80.000	76.900
Göteborg	886.782	879.611	378.000	370.720
Gdansk	685.643	511.876	32.600	
Constantza	662.796	556.694	240.000	
Livorno	637.798	628.489		124.900
Gdynia	616.441	485.255	133.900	107.000
Taranto	604.404	581.936		29.410
Koper	589.314	476.731	353.600	284.400
Napoli	526.768	534.694		27.920
Venezia	458.363	393.913		7.630
Trieste	393.195	277.058		62.730
Ravenna	215.336	183.577		28.410
Ancona	120.674	110.395		21.370

Source: KombiConsult analysis, partly estimated

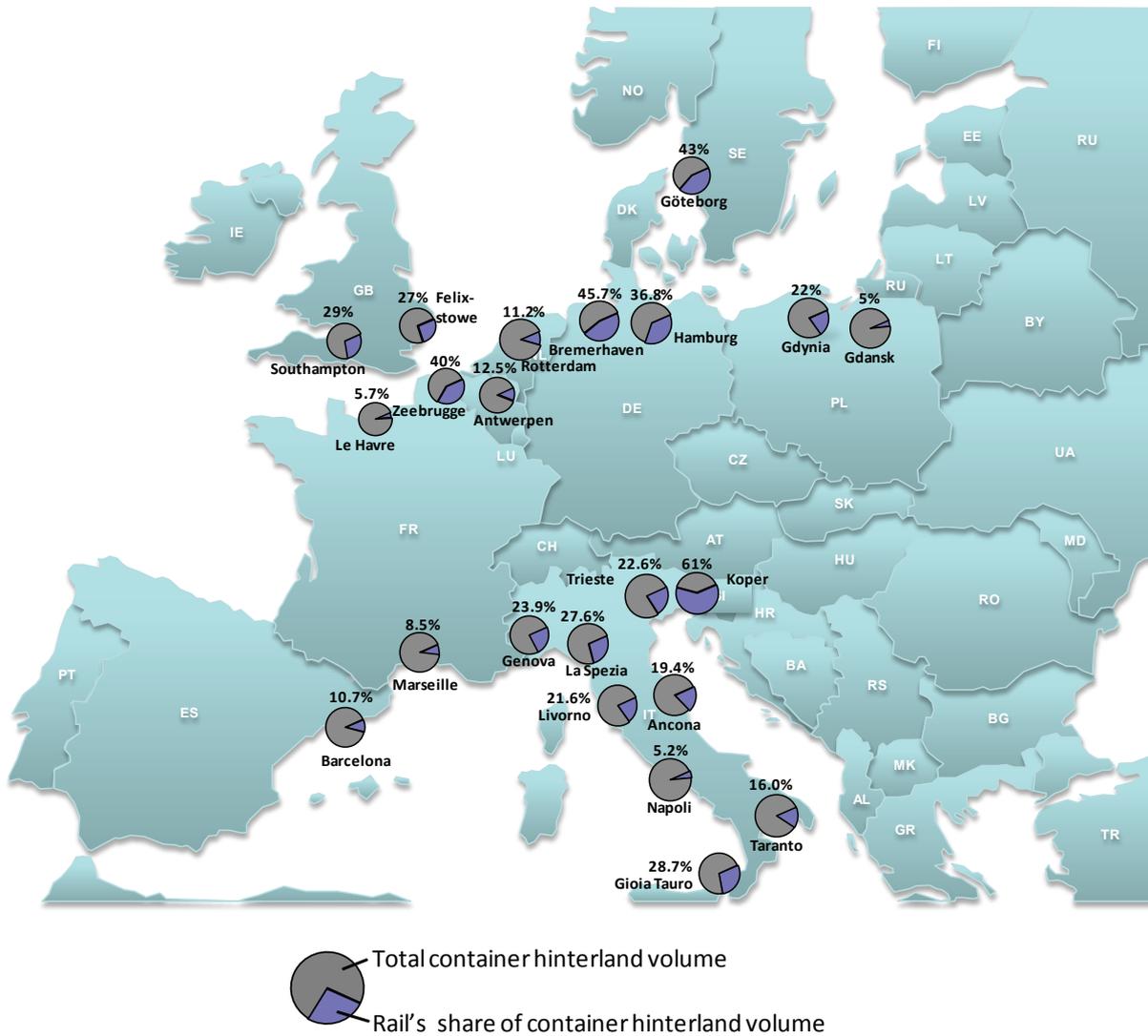
**Figure 8-3: Rail' share of seaborne container throughput and maritime transport of selected European ports, 2010-2011**

Port	Seaborne container throughput (TEU)		Rail share of seaborne throughput		Rail share of hinterland transport	
	2011	2010	2011	2010	2011	2010
Rotterdam	11.876.921	11.147.572	6,8%	6,8%	11,2%	10,3%
Hamburg	9.014.165	7.895.736	23,3%	24,4%	36,8%	36,5%
Antwerpen	8.638.311	8.468.475	8,1%	8,2%	12,5%	11,7%
Bremerhaven	5.915.487	4.888.655	16,3%	17,7%	45,7%	45,0%
Felixstowe	3.400.000	3.400.000	22,1%	20,9%	26,8%	25,4%
Gioia Tauro	2.338.000	2.852.264		0,9%		28,7%
Le Havre	2.215.262	2.358.077	4,7%	5,1%	5,7%	6,7%
Zeebrugge	2.206.681	2.499.756	11,0%	10,6%	40,0%	
Barcelona	2.033.549	1.948.422	7,2%	5,3%	10,7%	7,9%
Genova	1.847.102	1.758.858		21,9%		23,9%
Southampton	1.600.000	1.540.000	29,0%			
La Spezia	1.307.274	1.285.155	25,2%	24,4%	27,6%	28,6%
Marseille	944.047	953.435	8,5%	8,1%		
Göteborg	886.782	879.611	42,6%	42,1%		
Gdansk	685.643	511.876	4,8%			
Constantza	662.796	556.694	36,2%			
Livorno	637.798	628.489		19,9%	0,0%	21,6%
Gdynia	616.441	485.255	21,7%	22,1%		
Taranto	604.404	581.936		1,4%		16,0%
Koper	589.314	476.731	60,0%	59,7%		61,0%
Napoli	526.768	534.694		5,2%		5,2%
Venezia	458.363	393.913		1,9%		1,9%
Trieste	393.195	277.058		22,6%		22,6%
Ravenna	215.336	183.577		15,5%		15,5%
Ancona	120.674	110.395		19,4%		19,4%

Source: KombiConsult analysis

In Figures 8-4 the results of the investigation into rail's modal share of maritime transport at European seaports are graphically represented.

Figure 8-4: Rail's share of hinterland container transport, 2011



Source: KombiConsult analysis



## 9. ANNEXES

### Annex 1: Providers of rail/road intermodal services 2011

Company	Headquarter	Shareholder	Business model	Homepage	
ACTS	Switzerland	Private investors	n.a.	LSP	<a href="http://www.actsag.ch/">www.actsag.ch/</a>
Adria Kombi	Slovenia	Slovenske Zeleznice (SZ) Schenker ÖKOMBI Slovenian Chamber of Commerce Intertransport	26,0% 26,0% 25,1% 11,5% 11,5%	CT Operator	<a href="http://www.adriakombi.si/">www.adriakombi.si/</a>
AERS RailServices	Germany	Private investors	100,0%	CT Operator	<a href="http://www.aers-rail-services.de">www.aers-rail-services.de</a>
Alcotrans Container Line	Netherlands	Imperial Logistics International	100,0%	LSP	<a href="http://www.alcotrans.nl">www.alcotrans.nl</a>
Alpe Adria	Italy	Trenitalia Trieste Port Authority Friulia	33,3% 33,3% 33,3%	CT Operator	<a href="http://www.alpeadria.com">www.alpeadria.com</a>
Ambrogio Trasporti	Italy	Family-owned	100,0%	LSP	<a href="http://www.ambrogio.it">www.ambrogio.it</a>
ARGO Group	Czech Republic	Private investors	100,0%	LSP	<a href="http://www.argogroup.cz">www.argogroup.cz</a>
Ar-Gü Rail Transport	Turkey	Arkas	n.a.	LSP	<a href="http://www.argu.com.tr">www.argu.com.tr</a>
Baltic Rail	Estonia	Rail World Group	n.a.	CT Operator	<a href="http://www.balticrail.com">www.balticrail.com</a>
BDZ	Bulgaria	State-owned	100,0%	Railway	<a href="http://www.bdz.bg">www.bdz.bg</a>
Bohemiakombi	Czech Republic	Ceské Dráhy (CD) Cesmad Bohemia Kombiverkehr Intercontainer Austria (ICA)	30,0% 30,0% 20,0% 20,0%	CT Operator	<a href="http://www.bohemiakombi.cz">www.bohemiakombi.cz</a>
boxXpress	Germany	Rail & Intermodal Terminal Holding Eurogate Intermodal TX Logistik	47,0% 38,0% 15,0%	CT Operator	<a href="http://www.boxxpress.de">www.boxxpress.de</a>
Bulkhaul UK	United Kingdom	n.a.	n.a.	LSP	<a href="http://www.bulkhaul.co.uk">www.bulkhaul.co.uk</a>
CargoNet AB	Sweden	Cargonet AS Green Cargo	55,0% 45,0%	Railway	<a href="http://www.cargonet.no">www.cargonet.no</a>
CargoNet AS	Norway	Norges Statsbaner (NSB)	100,0%	Railway	<a href="http://www.cargonet.no">www.cargonet.no</a>
CARGOSPED	Poland	PKP Cargo	100,0%	LSP	<a href="http://www.cargosped.pl">www.cargosped.pl</a>
Cemat	Italy	Trenitalia Hupac Transport companies	53,3% 34,5% 12,3%	CT Operator	<a href="http://www.cemat.it">www.cemat.it</a>
CFL Multimodal	Luxemburg	Groupe CFL	100,0%	Railway	<a href="http://www.cfl.lu">www.cfl.lu</a>
CFR MARFA	Romania	State-owned	100,0%	Railway	<a href="http://www.cfrmarfa.cfr.ro">www.cfrmarfa.cfr.ro</a>
Combiberia	Spain	Renfe Novatrans Kombiverkehr Pañalón ASTIC (Association of road	22,5% 15,0% 14,0% 7,0% 41,5%	CT Operator	<a href="http://www.combiberia.com">www.combiberia.com</a>
CombiWest SAS	France	n.a.	n.a.	Other	<a href="http://www.combiwest.com">www.combiwest.com</a>
COMSA Transporte y Logística	Spain	COMSA	100,0%	Other	<a href="http://www.comsaemte.com">www.comsaemte.com</a>
Contargo AG	Switzerland	Rhenus	100,0%	LSP	<a href="http://www.contargo.net">www.contargo.net</a>
Contargo KG	Germany	Rhenus	100,0%	LSP	<a href="http://www.contargo.net">www.contargo.net</a>
Continental Rail	Spain	VÍAS Y CONSTRUCCIONES	100,0%	Other	<a href="http://www.continentalrail.es">www.continentalrail.es</a>
CP Freight	Portugal	Comboios de Portugal (CP)	100,0%	Railway	<a href="http://www.cpcarga.pt">www.cpcarga.pt</a>
Crokombi	Croatia	HZ Cargo Krapibna Sped Other shareholders	47,1% 40,0% 12,9%	CT Operator	<a href="http://www.crokombi.hr">www.crokombi.hr</a>

Company	Headquarter	Shareholder	Business model	Homepage
CSKD Intrans	Czech Republic	Intercontainer Austria Speditons Holding	80,0% 20,0%	CT Operator <a href="http://www.intrans.cz">www.intrans.cz</a>
CTL Logistics	Poland	European Rail Freight Jaroslaw Pawluk	75,0% 25,0%	Railway <a href="http://www.ctl.pl">www.ctl.pl</a>
DB Schenker Rail	Germany	DB Mobility Logistics	100,0%	Railway <a href="http://www.db-intermodal.com">www.db-intermodal.com</a>
DB Schenker Rail (UK)	United Kingdom	DB Schenker Rail	100,0%	Railway <a href="http://www.rail.dbschenker.co.uk">www.rail.dbschenker.co.uk</a>
DB Schenker Rail BTT	Germany	DB Mobility Logistics	100,0%	CT Operator <a href="http://www.btt-gmbh.de">www.btt-gmbh.de</a>
Delcatrans	Belgium	Private investors	100,0%	LSP <a href="http://www.delcatrans.be/">www.delcatrans.be/</a>
DFDS Logistics	United Kingdom	Lauritzen Foundation AP Moeller - Maersk Other shareholders	36,3% 31,3% 32,4%	LSP <a href="http://www.dfdsgroup.com">www.dfdsgroup.com</a>
DHL Freight	Germany	Deutsche Post	100,0%	LSP <a href="http://www.dhl.de">www.dhl.de</a>
Direct Rail Services	United Kingdom	Nuclear Decommissioning Authority	100,0%	Railway <a href="http://www.directrailservices.com">www.directrailservices.com</a>
Distri Rail	Netherlands	Booij Beheer De Roo Group of Companies	50,0% 50,0%	LSP <a href="http://www.distrirail.nl/">www.distrirail.nl/</a>
Duisport rail	Germany	duisport Duisburger Hafen	100,0%	Other <a href="http://www.duisport.de">www.duisport.de</a>
Eesti Raudtee	Estonia	State-owned	100,0%	Railway <a href="http://www.evr.ee/?id=2">www.evr.ee/?id=2</a>
ELO Ecologistics	Luxembourg	Groupe CFL	100,0%	CT Operator <a href="http://www.cfl.lu">www.cfl.lu</a>
Emons Rail Cargo	Germany	Emons Holding	100,0%	LSP <a href="http://www.emons.de/">www.emons.de/</a>
EUROGATE Intermodal	Germany	Eurogate	100,0%	Other <a href="http://www.egim.de">www.egim.de</a>
Europe Container Terminals	Netherlands	Hutchinson Coöperatief Stichting Werknemersaandelen ECT	99,0% 1,0%	Other <a href="http://www.ect.nl/en">www.ect.nl/en</a>
ERS Railways	Netherlands	A.P. Moller - Maersk Group	100,0%	Railway <a href="http://www.ersrail.com">www.ersrail.com</a>
Ewals Intermodal	Belgium	Ewals Cargo Care	100,0%	LSP <a href="http://www.ewals.com">www.ewals.com</a>
Far East Land Bridge	Cyprus	n.a.	n.a.	CT Operator <a href="http://www.fareastlandbridge.com">www.fareastlandbridge.com</a>
Freightliner Ltd.	United Kingdom	Freightliner Group	100,0%	Railway <a href="http://www.freightliner.co.uk">www.freightliner.co.uk</a>
Fremura	Italy	Family-owned	100,0%	LSP <a href="http://www.fremuragroup.com">www.fremuragroup.com</a>
GB Railfreight	United Kingdom	Europorte (Eurotunnel Group)	100,0%	Railway <a href="http://www.gbrailfreight.com">www.gbrailfreight.com</a>
GEFCO	France	PSA Peugeot Citroën	100,0%	LSP <a href="http://www.gefco.net">www.gefco.net</a>
GMC Logistics Group	Italy	Family-owned	100,0%	LSP <a href="http://www.gmcinternational.it">www.gmcinternational.it</a>
Greencargo	Sweden	State-owned	100,0%	Railway <a href="http://www.greencargo.com">www.greencargo.com</a>
Greenmodal	France	CMA Rail S.A.	100,0%	LSP <a href="http://www.cma-cgm-environment.com">www.cma-cgm-environment.com</a>
GTS	Italy	Family Murciaccia Wind Holding	57,0% 43,0%	LSP <a href="http://www.gtstrasporti.com">www.gtstrasporti.com</a>
Hangartner Terminal	Switzerland	Schenker AG	100,0%	LSP <a href="http://www.dbschenker.com">www.dbschenker.com</a>
Hannibal	Italy	Contship Italia Group	100,0%	CT Operator <a href="http://www.contshipitalia.com">www.contshipitalia.com</a>
Hellmann Worldwide	Germany	Family-owned	100,0%	LSP <a href="http://www.hellmann.de">www.hellmann.de</a>
Hungária Intermodal	Hungary	Intercontainer Austria	100,0%	CT Operator <a href="http://www2.intermodal.hu">www2.intermodal.hu</a>
Hungarokombi	Hungary	ÖKOMBI MKFE (Association of road operators) Gysev MSZE (Association of forwarders) MAV	26,0% 22,0% 19,2% 18,0% 14,8%	RoLa <a href="http://www.hungarokombi.hu">www.hungarokombi.hu</a>
HUPAC Intermodal AG	Switzerland	Forwarding and transport companies Railway undertakings	72,0% 28,0%	CT Operator <a href="http://www.hupac.com">www.hupac.com</a>
HUPAC Intermodal NV	Netherlands	HUPAC AG	100,0%	CT Operator <a href="http://www.hupac.com">www.hupac.com</a>
HZ Cargo	Croatia	State-owned	100,0%	Railway <a href="http://www.hznet.hr">www.hznet.hr</a>
Ignazio Messina	Italy	Family-owned	100,0%	LSP <a href="http://www.messinaline.it">www.messinaline.it</a>
IGS Schreiner Intermodal	Germany	IGS Logistics Group Holding	100,0%	LSP <a href="http://www.igs-logistics.de">www.igs-logistics.de</a>
IMS Intermodal Solutions	Netherlands	Husa Transportation Group	n.a.	CT Operator <a href="http://www.intermodal-solutions.nl">www.intermodal-solutions.nl</a>
IMS Rail Switzerland	Switzerland	Intermove Systems (IMS)	100,0%	LSP <a href="http://www.imscargo.com">www.imscargo.com</a>
Inter Ferry Boats (IFB)	Belgium	SNCB Logistics	100,0%	CT Operator <a href="http://www.interferryboats.be">www.interferryboats.be</a>
InterBulk	United Kingdom	Public company		LSP <a href="http://www.interbulkgroup.com">www.interbulkgroup.com</a>
Intercontainer Austria (ICA)	Austria	Rail Cargo Austria(RCA)	100,0%	CT Operator <a href="http://www.railcargo.at">www.railcargo.at</a>
Intercontainer Scandinavia	Sweden	Medströms Invest AB	100,0%	CT Operator <a href="http://www.intercontainer.se">www.intercontainer.se</a>
Intermove Systems (IMS)	Austria	Private investor	100,0%	LSP <a href="http://www.imscargo.com">www.imscargo.com</a>
ISC - Interporto Servizio Cargo	Italia	Interporto Campano	n.a.	CT Operator <a href="http://www.isc.it">www.isc.it</a>
IWT	Ireland	Private investors	100,0%	LSP <a href="http://www.iwt-irl.com">www.iwt-irl.com</a>

Company	Headquarter	Shareholder	Business model	Homepage	
Italcontainer	Italy	FS Logistica	100,0%	CT Operator	<a href="http://www.italcontainer.it">www.italcontainer.it</a>
JSC Lithuanian Railways	Lithuania	State-owned	100,0%	Railway	<a href="http://www.litrail.lt">www.litrail.lt</a>
K + S Transport	Germany	Kali + Salz AG	100,0%	Other	<a href="http://www.kalitransport.com">www.kalitransport.com</a>
Kombiverkehr KG	Germany	Forwarding and transport companies DB Mobility Logistics AG	50,0% 50,0%	CT Operator	<a href="http://www.kombiverkehr.de">www.kombiverkehr.de</a>
Konrad Zippel Spediteur	Germany	Private investors	100,0%	LSP	<a href="http://www.zippel24.com">www.zippel24.com</a>
LDZ (Latvijas Dzelzceļš)	Latvia	State-owned	100,0%	Railway	<a href="http://www.ldz.lv">www.ldz.lv</a>
LISKI	Ukraine	State-owned	100,0%	Railway	<a href="http://www.liski.ua">www.liski.ua</a>
LKW Walter	Austria	Family-owned	100,0%	LSP	<a href="http://www.lkw-walter.co.uk">www.lkw-walter.co.uk</a>
Locon AG	Deutschland	Private investors	100,0%	Railway	<a href="http://www.locon-ag.de">www.locon-ag.de</a>
Logitren	Spanien	Grupo Torres Cámara ACS-Vías y Contricciones Generalitat Valencia (FGV)	n.a. n.a. n.a.	Other	<a href="http://www.logitren.es">www.logitren.es</a>
Logtainer	Italy	Gruppo Investimenti Portuali SpA	100,0%	LSP	<a href="http://www.logtainer.com">www.logtainer.com</a>
Logwin Solutions	Germany	DELTON AG	n.a.	LSP	<a href="http://www.logwin-logistics.com">www.logwin-logistics.com</a>
LTE Logistik und Transport	Austria	Graz-Köflacher Bahn und Busbetriebe Porr Solutions	50,0% 50,0%	Railway	<a href="http://www.lte.at">www.lte.at</a>
Medlog	Belgium	MSC	100,0%	LSP	<a href="http://www.msobelgium.com">www.msobelgium.com</a>
Metrans	Czech Republic	HHLA Management	86,5% 13,5%	CT Operator	<a href="http://www.metrans.cz">www.metrans.cz</a>
Metrans Danubia	Slovakia	Mettrans	100,0%	CT Operator	<a href="http://www.metrans.cz">www.metrans.cz</a>
MidCargo	Sweden	CFL Cargo Svensk Tagkraft	51,0% 49,0%	Railway	<a href="http://www.cflcargo.se/">www.cflcargo.se/</a>
MTP Multitranspool	Switzerland	n.a.	n.a.	CT Operator	n.a.
Naviland Cargo	France	SNCF Geodis	100,0%	CT Operator	<a href="http://www.naviland-cargo.com">www.naviland-cargo.com</a>
Navismart/IntegRail	Hungary	Private investors	n.a.	CT Operator	<a href="http://www.navismart.com/">www.navismart.com/</a>
NECOSS	Germany	Contargo ACOS Transport EVB Pöhland	26,0% 25,1% 25,1% 23,8%	LSP	<a href="http://www.evb-elbe-weser.de">www.evb-elbe-weser.de</a>
Nosta	Germany	NOSTA Holding	100,0%	LSP	<a href="http://www.nosta.de/">www.nosta.de/</a>
Novatrans	France	SNCF Geodis Forwarders FNTR (Association of road operators)	95,8% 3,6% 0,6%	CT Operator	<a href="http://www.novatrans.fr">www.novatrans.fr</a>
NTT 2000	Germany	Eurogate Intermodal Contargo ACOS Transport EVB	26,0% 25,1% 25,1% 23,8%	LSP	<a href="http://www.evb-elbe-weser.de">www.evb-elbe-weser.de</a>
Ökombi	Austria	Rail Cargo Austria AG (RCA)	100,0%	RoLa	<a href="http://www.oekombi.at/">www.oekombi.at/</a>
OPTIMODAL	Netherlands	Kombiverkehr DB Schenker Rail Nederland	75,0% 25,0%	CT Operator	<a href="http://www.optimodal.nl">www.optimodal.nl</a>
P&O Ferrymasters	United Kingdom	Dubai World	100,0%	LSP	<a href="http://www.poferrymasters.com">www.poferrymasters.com</a>
PCC Intermodal	Poland	PCC SE DB Schenker Rail Polska Others	61,9% 13,9% 24,2%	Other	<a href="http://www.pccintermodal.pl">www.pccintermodal.pl</a>
PKP Cargo	Poland	State PKP S.A.	91,0% 9,0%	Railway	<a href="http://www.pkp-cargo.pl">www.pkp-cargo.pl</a>
Pöhland Speditionsges.	Germany	Pöhland Speditionsgesellschaft	100,0%	LSP	<a href="http://www.poehland.com">www.poehland.com</a>
Polzug Intermodal	Germany	HHLA Intermodal GmbH PKP Cargo	66,7% 33,3%	CT Operator	<a href="http://www.polzug.de">www.polzug.de</a>
Prokont	Poland	PKP Cargo	100,0%		<a href="http://www.prokont.pl">www.prokont.pl</a>
Quadrum Raillogistics	Belgium	Private investors	100,0%	CT Operator	<a href="http://www.quadrum-raillogistics.com">www.quadrum-raillogistics.com</a>
Rail Cargo Austria	Austria	State-owned	100,0%	Railway	<a href="http://www.railcargo.at">www.railcargo.at</a>
Rail Cargo Austria Mobiler	Austria	Rail Cargo Austria	100,0%	Railway	<a href="http://www.railcargo.at">www.railcargo.at</a>
Rail Cargo Hungaria	Hungary	Rail Cargo Austria	100,0%	Railway	<a href="http://www.railcargo.hu">www.railcargo.hu</a>
Roland Spedition	Austria	Family-owned	100,0%	LSP	<a href="http://www.rolsped.com">www.rolsped.com</a>

Company	Headquarter	Shareholder		Business model	Homepage
RailCare	Switzerland	Edeka Private investors	n.a. n.a.	Railway	<a href="http://www.railcare.ch">www.railcare.ch</a>
Raillogix	Netherlands	Rail Innovators Holding	100,0%	CT Operator	<a href="http://www.raillogix.com">www.raillogix.com</a>
Ralpin AG	Switzerland	BLS AG SBB Cargo AG Hupac SA Trenitalia S.p.A.	33,0% 33,0% 33,0% 1,0%	RoLa	<a href="http://www.ralpin.de">www.ralpin.de</a>
Renfe Mercancias - Contrén	Spain	State-owned	100,0%	Railway	<a href="http://www.contrenrenfe.com">www.contrenrenfe.com</a>
Roberto Bucci	Italy	Family-owned	100,0%	LSP	<a href="http://www.bucci.it">www.bucci.it</a>
Rocombi	Romania	CFR Marfa S.A. Cemat S.p.A. Novatrans S.A. Transport companies	20,0% 10,0% 10,0% 60,0%	CT Operator	<a href="http://www.rocombi.ro">www.rocombi.ro</a>
Salzburger Lokalbahn	Austria	Federal state of Salzburg City of Salzburg Energie AG Oberösterreich	42,6% 31,3% 26,1%	Railway	<a href="http://www.salzburg-ag.at">www.salzburg-ag.at</a>
SAMSKIP Van Dieren	Netherlands	SAMSKIP	100,0%	LSP	<a href="http://www.vandierenmaritime.nl">www.vandierenmaritime.nl</a>
SBB Cargo	Switzerland	State-owned	100,0%	Railway	<a href="http://www.sbbcargo.com">www.sbbcargo.com</a>
SCT Transport	Sweden	n.a.	n.a.	LSP	<a href="http://www.scttransport.se">www.scttransport.se</a>
Shuttlewise	Netherlands	HUSA Transportation Den Hartogh Logistics Martijn Elbers	49,0% 49,0% 2,0%	CT Operator	<a href="http://www.shuttlewise.com">www.shuttlewise.com</a>
Sogemar	Italy	Contship Italia Group	100,0%	CT Operator	<a href="http://www.contshipitalia.com">www.contshipitalia.com</a>
Spedcont	Poland	Gdynia Port Authority PEKAES	52,0% 48,0%	LSP	<a href="http://www.spedcont.com.pl">www.spedcont.com.pl</a>
Spinelli	Italy	Family-owned	100,0%	LSP	<a href="http://www.gruppospinelli.com">www.gruppospinelli.com</a>
SZ - SLOVENSKE ZELEZNICE	Slovenia	State-owned	100,0%	Railway	<a href="http://www.slo-zeleznice.si">www.slo-zeleznice.si</a>
T3M / TAB	France	Family-owned	100,0%	LSP	<a href="http://www.tab-transport.com">www.tab-transport.com</a>
TCDD (Turkish State Railways)	Turkey	State-owned	100,0%	Railway	<a href="http://www.tcdd.gov.tr/">www.tcdd.gov.tr/</a>
TIM-Rail	Germany	Family-owned	100,0%	LSP	<a href="http://www.tim-logistik.de">www.tim-logistik.de</a>
Transa Spedition	Germany	DB Mobility Logistics	100,0%	LSP	<a href="http://www.transa.dbschenker.de">www.transa.dbschenker.de</a>
Transfesa Transportes Ferroviarios Especiales	Spain	DB Mobility Logistics Renfe SNCF Others	55,1% 20,4% 20,4% 4,2%	LSP	<a href="http://www.transfesa.com/">www.transfesa.com/</a>
TFG Transfracht	Germany	DB Mobility Logistics	100,0%	CT Operator	<a href="http://www.transfracht.com/">www.transfracht.com/</a>
Trans Eurasia Logistics	Germany	DB Mobility Logistics Polzug International Kombiverkehr RZD - Russian Railways Trans Container	30,0% 10,0% 10,0% 30,0% 20,0%	CT Operator	<a href="http://www.trans-eurasia-logistics.com">www.trans-eurasia-logistics.com</a>
Trenitalia	Italy	State-owned	100,0%	Railway	<a href="http://www.trenitalia.com">www.trenitalia.com</a>
TTS Belgium S.A.	Belgium	Family-owned	100,0%	LSP	<a href="http://www.tts.be">www.tts.be</a>
TX Logistik	Germany	Trenitalia	100,0%	Railway	<a href="http://www.txlogistik.eu">http://www.txlogistik.eu</a>
Vänorexpressen/Mälarpöndel	Sweden	Karlssongruppen AB	100,0%	Other	<a href="http://www.vanorexpressen.se">www.vanorexpressen.se</a>
VIIA Autoroute Ferrovaire	France/Italy	SNCF Geodis Trenitalia	50,0% 50,0%	CT Operator	<a href="http://www.viia.com">www.viia.com</a>
VIIA Lorry Rail	Luxemburg	SNCF Geodis CFL Cargo Modalohr (Groupe Lohr)	58,3% n.a. n.a.	CT Operator	<a href="http://www.viia.com">www.viia.com</a>
VR Cargo	Finnland	State-owned	100,0%	Railway	<a href="http://www.vr.fi">www.vr.fi</a>
WBT (Weets-Bahn)	Germany	Family-owned	100,0%	LSP	<a href="http://www.weets.eu">www.weets.eu</a>
Wenzel Logistics	Austria	Family-owned	100,0%	LSP	<a href="http://www.wenzel-logistics.com">www.wenzel-logistics.com</a>
Westfälische	Germany	Regional authorities	100,0%	Railway	<a href="http://www.wle-online.de">www.wle-online.de</a>
ZSSK Cargo	Slovakia	State-owned	100,0%	Railway	<a href="http://www.zscargo.sk">www.zscargo.sk</a>

## Annex 2: Unaccompanied CT: international transport volume by country-country trade lanes, 2011

Trade lane		TEU	Tonnes
Germany -	Italy via AT	673.027	8.393.894
Belgium -	Italy via CH	569.388	7.200.914
Germany -	Italy via CH	565.392	6.803.627
Czech Republic -	Germany	492.100	4.329.931
Germany -	Netherlands	469.968	4.770.767
Austria -	Germany	446.979	4.782.193
Italy -	Netherlands via CH	265.918	3.079.864
Germany -	Switzerland	256.284	2.230.313
Belgium -	Germany	204.602	2.156.328
France -	Italy	200.614	2.392.854
Germany -	Sweden	192.513	2.575.773
Germany -	Poland	169.382	1.350.049
CIS States -	Poland	165.399	1.352.902
Belgium -	France	163.683	1.747.530
Hungary -	Slovenia	142.462	1.130.778
Slovakia -	Slovenia	133.803	855.982
Germany -	Hungary	127.956	1.355.337
Germany -	Spain	113.034	1.293.666
France -	Luxemburg	109.710	1.104.000
Czech Republic -	Netherlands	96.422	517.120
CIS States	Latvia	95.795	1.053.745
Czech Republic -	Slovakia	88.018	852.564
Norway -	Sweden	79.000	170.000
Belgium -	Switzerland	72.734	658.648
Hungary -	Turkey	64.606	971.616
Lithuania -	Ukraine	56.015	672.180
Austria -	Italy	54.510	525.599
France -	Germany	52.032	502.009
Belgium -	Sweden	50.000	680.000
Germany -	Russia	46.310	134.584
Belgium -	Italy via AT	41.528	484.800
Germany -	Turkey	38.322	409.364

Trade lane		TEU	Tonnes
Italy -	Netherlands via AT	37.380	469.004
Denmark -	Italy via AT	37.342	1.009.722
Netherlands -	Poland	37.200	520.800
Spain -	United Kingdom	35.015	389.115
Austria -	Slovenia	34.220	370.015
Netherlands -	Sweden	33.750	330.000
Belgium -	Luxemburg	32.190	680.060
Czech Republic -	Russia	32.000	n.a.
Netherlands -	Switzerland	32.000	352.000
Estonia -	CIS States	31.908	289.829
France -	Spain	31.274	316.824
France -	Russia	29.400	265.000
Italy -	Sweden via CH	29.150	371.415
Austria -	Netherlands	27.444	294.134
Belgium -	Spain	26.166	358.253
Czech Republic -	Slovenia	25.724	173.686
Italy -	Luxemburg via CH	24.396	315.970
Bulgaria -	Turkey	23.816	417.619
Austria -	Greece	23.792	220.027
Austria -	Hungary	23.114	230.396
Germany -	Slovenia	21.968	177.205
Belgium -	Romania	21.071	219.036
Denmark -	Italy via CH	20.406	253.168
CIS States -	Finnland	20.000	175.000
Europe -	East Asia	16.857	129.628
Italy -	United Kingdom via CH	16.101	190.111
Belgium -	Poland	15.310	164.143
Germany -	Slovakia	13.482	14.345
Croatia -	Republic of Serbia	13.040	99.019
Portugal -	Spain	12.635	149.542
Austria -	Turkey	10.167	94.085
Greece -	Hungary	9.748	121.364
Hungary -	Netherlands	9.550	100.565
Slovenia -	Turkey	9.402	81.588
Italy -	Switzerland	9.110	87.790

Trade lane		TEU	Tonnes
Romania -	Russia	8.800	96.800
Denmark -	Germany	8.686	54.986
Austria -	Czech Republic	7.430	61.897
Netherlands -	Norway	7.300	68.357
Germany -	Norway	7.174	86.127
Hungary -	Italy	6.944	97.597
Belgium -	Netherlands	6.509	57.660
Germany -	Luxemburg	4.356	163.350
Italy -	Spain	4.331	58.551
Croatia -	Hungary	3.212	20.714
Austria -	Belgium	3.193	51.437
Germany -	Romania	2.960	37.676
Greece -	Turkey	2.867	46.922
Belgium -	Russia	2.858	31.224
Austria -	Romania	2.638	36.290
Italy -	Romania	2.540	45.720
CIS States -	Germany/Benelux	2.500	25.750
Austria -	Slovakia	2.364	8.886
Norway/Sweden -	Switzerland	2.118	27.083
Netherlands -	Romania	2.052	23.106
Italy -	Poland	1.972	25.688
Austria -	Switzerland	1.898	16.133
Germany -	Portugal	1.838	19.532
Austria -	Denmark	1.753	24.503
Hungary -	Romania	1.593	28.286
Bulgaria -	Romania	1.417	26.612
Republic of Serbia -	Slovenia	1.282	7.935
Finnland -	Germany	1.240	3.449
Croatia -	Slovenia	1.092	4.297
Germany -	Estonia	930	n.a.
Hungary -	Slovakia	886	7.974
Belgium -	Greece	814	8.174
Germany -	Greece	664	6.660

Trade lane		TEU	Tonnes
France -	Netherlands	587	8.043
Netherlands -	Russia	530	4.096
Poland -	Slovenia	514	3.008
Italy -	Russia via CH	394	4.237
Belgium -	Hungary	389	3.024
Bulgaria -	Slovenia	368	2.568
Germany -	Macedonia	316	3.002
Slovenia -	Switzerland	266	3.508
France -	Switzerland	264	3.505
Spain -	Switzerland	216	2.563
Belgium -	Bulgaria	188	1.986
Italy -	Slovenia	184	1.652
Croatia -	Germany	88	866
Czech Republic -	Hungary	70	61
Estonia	Lithuania	63	173
Denmark -	Switzerland	50	329
Austria -	Croatia	32	409
Germany -	Bosnia	14	144
Italy -	Norway via AT	14	192
Croatia -	Slovakia	12	88
Romania -	Slovenia	12	114
Czech Republic -	Poland	8	74
Netherlands -	Slovenia	6	57
Austria -	France	2	17
France -	Poland	2	13

## Annex 3: Accompanied CT: O-D matrix 2011

Corridor	Trade lane	N° of trucks 2011
Domestic services		
Austria	Wörgl - Brenner	133.579
	Salzburg - Villach	4.875
Switzerland	Basel - Lugano	10.699
<b>Subtotal domestic</b>		<b>149.153</b>
International services		
Austria - Hungary	Wels - Budapest	410
	Wels - Szeged	30.908
Austria - Italy	Salzburg - Trieste	29.840
	Wörgl - Trento	58.499
Austria - Slovenia	Wels - Maribor	36.464
France - Italy	Aiton - Orbassano	7.250
Germany - Italy via AT	Regensburg - Trento	27.492
Germany - Italy via CH	Freiburg - Novara	93.534
<b>Subtotal international</b>		<b>284.397</b>
<b>Total accompanied services</b>		<b>433.550</b>

Source: KombiConsult analysis, CT service providers, UIRR

## Annex 4: Unaccompanied CT: major transport areas by handling volume, 2011

CT handling volume 2011	Transport Area
> 2.5 m TEU	Hamburg
1.5 - 2.0 m TEU	Milano/Novara
1.0 - 1.5 m TEU	Bremerhaven/Bremen
0.75 - 1.0 m TEU	Rotterdam Felixstowe
0.5 - 0.75 m TEU	Antwerpen Verona Ludwigshafen/Mannheim Köln Duisburg Praha Wien Basel
0.25 - 0.5m TEU	Linz Southampton Oslo München Genova Dortmund Göteborg Koper La Spezia Nürnberg Stuttgart Barcelona Paris

**Note:** Handling volumes include both local rail/road and gateway rail/rail shipments.



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Editions Techniques Ferroviaires  
Railway Technical Publications  
Eisenbahntechnische Publikationen

16 rue Jean Rey - F 75015 Paris  
Email: [ETFpubli@uic.org](mailto:ETFpubli@uic.org)  
[www.uic.org/etf](http://www.uic.org/etf)

Published by  
International Union of Railways (UIC) - Railway Technical Publications (ETF)  
16, rue Jean Rey 75015 Paris - France  
Cover and layout: Coralie Filippini / © ETF Publication  
December 2012  
Dépôt légal December 2012

ISBN 978-2-7461-2130-0



Sandra Géhénot  
Tel: +33 (0) 1 44 49 20 84  
Fax: +33 (0) 1 44 49 20 79  
e-mail: [gehenot@uic.org](mailto:gehenot@uic.org)

International Union of Railways  
16, rue Jean Rey - F 75015 Paris  
Tel: +33 (0) 1 44 49 20 20  
Fax: +33 (0) 1 44 49 20 29  
[www.uic.org](http://www.uic.org)

