# DIOMIS

## Developing Infrastructure and Operating Models for Intermodal Shift

# 2007 Report on Intermodal Rail/Road Transport in Europe

January 2009

UNION INTERNATIONALE DES CHEMINS DE FER
INTERNATIONALER EISENBAHNVERBAND
INTERNATIONAL UNION OF RAILWAYS


**D**eveloping **I**nfrastructure and **O**perating **M**odels for **I**ntermodal **S**hift

# 2007 Report on Intermodal Rail/Road Transport in Europe

KombiConsult
beraten planen umsetzen

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## Preface

In November 2006, when we published the Report on Combined Transport (CT) in Europe 2005 as part of the DIOMIS project, we wanted to give an initial response to the demand, which had only recently come to light, for political, infrastructure, business and strategic stakeholders and decision-makers to be provided with documentation that would give an overall view of CT and assist them in making decisions affecting the development of CT in Europe.

We also announced our intention to update this report every two years, and, accordingly, the present 2008 edition has been updated to cover the situation of CT in 2007.

The authors of the study have refined their methods of analysis and expanded their sources and coverage. The reader will find that CT exceeded our previous growth projections during those two years but also in 2008, and that the CT industry has expanded even further in terms of operators and relevance for customers and society as a whole.

The present economic downturn, resulting from the ongoing financial crunch, has undoubtedly affected CT growth during the last quarter of 2008 and will have an even greater impact on its evolution in the course of 2009: goods that are not produced cannot be transported. Our next update, focusing on 2009, will of course reflect that.

But, sometime in the course of 2009/2010, the financial world is bound to come to its senses, the general public will regain confidence, orders will be made again and the global economy will start to recover. CT will be there to respond to the demands arising from this new situation.

It would indeed be a grave, even fatal mistake for the CT stakeholders and decision-makers to use the current economic slump as an excuse to avoid taking action where action is now needed, in particular vis-à-vis rail freight and CT's future capacity requirements. Nothing will ever be the same again and, when the storm eventually subsides, it will not be business as usual: the need for modal shift and competitive, environmentally-friendly freight transport will not disappear. We can at best use the current economic slump as a short additional breathing space, to then be better prepared and take the necessary action in order to anticipate the capacity constraints predicted by DIOMIS for 2015/2020.

We hope our work will help the reader share our sense of urgency, and we look forward to cooperating with all the stakeholders in order to reach this shared goal.

**Eric Peetermans**
**Chairman of the UIC Combined Transport Group**

**December 2008**

# 1 The unaccompanied intermodal rail/road industry in 2007

## 1.1 Market size

The 2007 survey identified a total of 105 companies providing unaccompanied combined rail/road services in Europe in 2007. This meant there were 21 more intermodal service suppliers than in 2005, when the pioneering analysis of the European intermodal industry was carried out. This was partly due to the fact that new players had entered the market, and also because companies that had been – or still were – fairly reluctant to make their intermodal business public, or were operating in the less transparent geographical periphery of Europe were identified. Moreover, some companies mentioned in the 2005 report had ceased operating on the intermodal market.

The complete list of intermodal companies is presented in an appendix to this report.

## 1.2 Business models

Almost all the 105 intermodal service providers could clearly be classified according to one of the three main categories of intermodal business models:

- Generalist intermodal operator
- Railway undertaking acting as an operator
- Logistics service provider acting as an operator

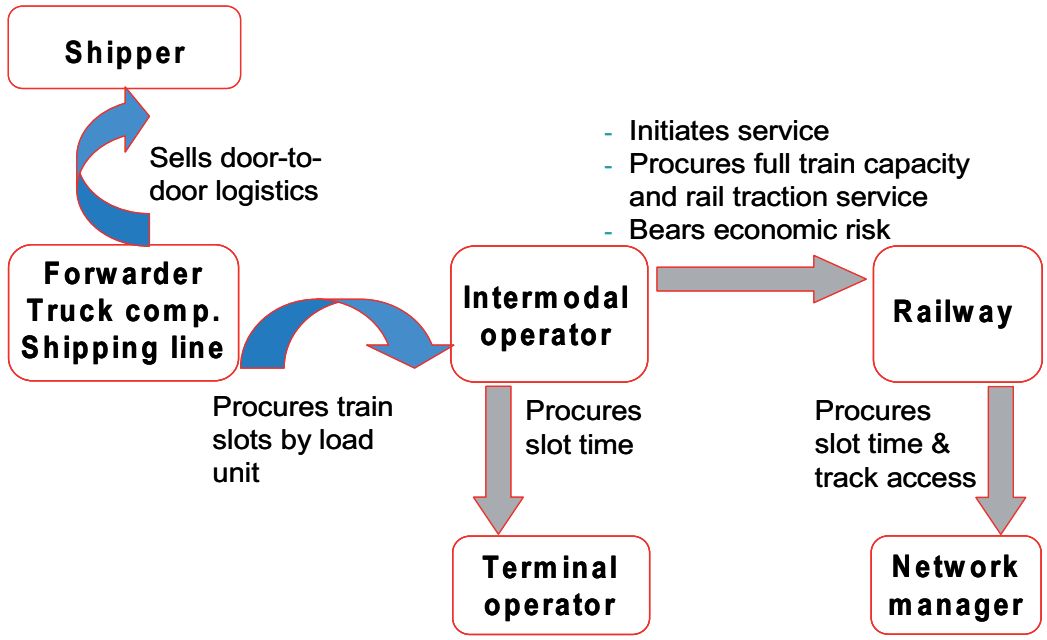
### Generalist intermodal operator

The development of the intermodal industry in Europe in the late 1960s was particularly due to a new type of specialised logistics service provider being established, the intermodal operator. In the beginning its primary role was to bring together the state railway sector, which provided all the resources needed to perform rail operations, and the shippers, forwarding agents, road transport operators and shipping lines wishing to transport cargo. Even though there is now a widespread basis of co-operation between rail and road, this distribution of roles has generally stayed the same. However, a significant change has been that intermodal operators have taken on the leading role in terms of product development, setting rail production and taking economic risks.

The business model of generalist type of intermodal operator has the following characteristics (see also ***Figure 1***):

- Intermodal operators define, implement and operate intermodal services on behalf of third parties and their cargo.
- Based on customer requirements they design intermodal services, particularly in terms of origin and destination of the trains (terminals), timetables, routing, train weight and length, price schemes, and types of rail cars used.
- On the production side operators tend to purchase most supply services such as transhipment, rail transport or – if door-to-door services are provided – road trucking, in order to keep assets low. However, many operators own a fleet of intermodal wagons.
- Intermodal operators increasingly purchase block trains from railway undertakings and thus take on the economic risk of filling train capacity.
- Generally, they retail the train capacity to customers. Depending on market positioning, space can be booked by any customer or a specific clientele, for example forwarding agents (see *chapter 1.3*). This is what we call an operator-driven, open block train service, as opposed to "company trains" dedicated to one user.

**Figure 1: Business model I: generalist intermodal operator**



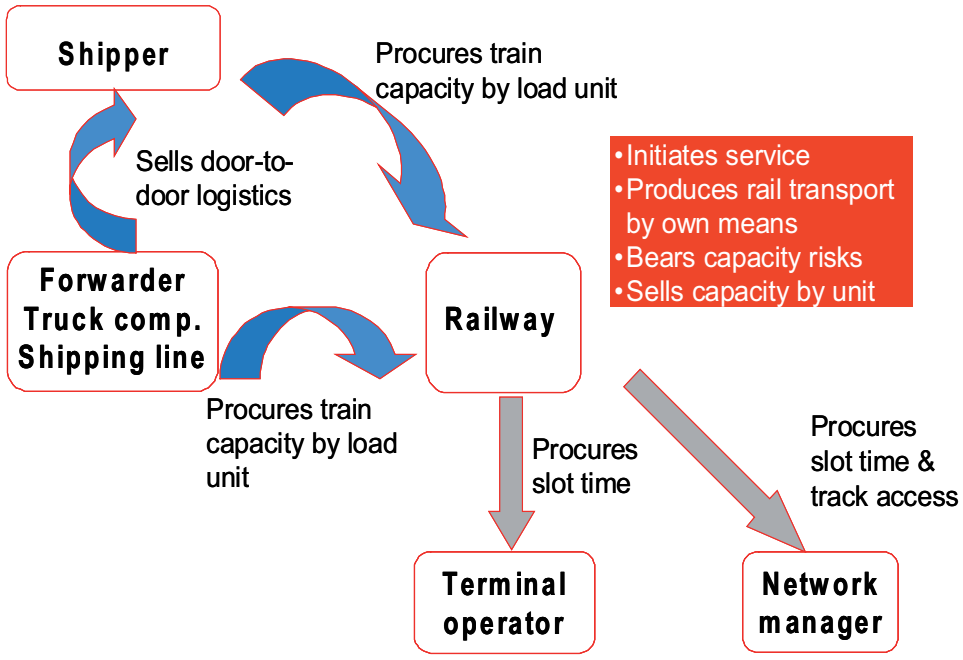

*Source: KombiConsult*

For almost 40 years the *International Union of combined Road-Rail transport companies (IURR)* has brought together intermodal service providers that consider themselves generalist operators. *Inter Ferry Boats, Intercontainer-Interfrigo* and *Metrans*, as well as new operators such as *boxXpress* or *Vänerexpressen* also belong to this category.

### Railway undertaking acting as an operator

Practically all established European railway undertakings and a substantial number of new entrants onto the market are involved in intermodal services as companies operating trains. In addition, many of them act as intermodal operators by providing more or less "open" combined transport schemes for third party shipments (see ***Figure 2***). However, similarly to generalist operators, they also organise and operate company trains for specific customers.

**Figure 2: Business model II: railway undertaking acting as an operator**




*Source: KombiConsult*

With regard to the scope and extent of intermodal services, a distinction can be drawn between two types of railway:

- Most established railway undertakings have maintained a range of domestic and international wagonload services, the latter in cooperation with other railways. These systems generally give customers the opportunity to ship intermodal loading units as well. When a railway solely focuses on this type of role in combined transport activities it acts as an operator on a comparatively small scale.
- In contrast, other railway undertakings could be considered full-blown intermodal operators. They operate and sell specific intermodal services developed by their organisation and also offer integrated intermodal door-to-door supply chain solutions for shippers. Among these RUs are *Deutsche Bahn, RENFE, SBB Cargo, VR Cargo*, *CargoNet*, UK railways such as *Freightliner* or *First GBRf* as well as newcomers, e.g. *TX Logistik*. There are also railways that have divided their intermodal business into independent companies, such as *ACOS*, which is backed by the previous short line *EVB*, or mixed business models such as *Rail Link*, which is a joint venture of *Veolia Cargo* and *CMA-CGM*.

**Logistics service provider acting as an operator**

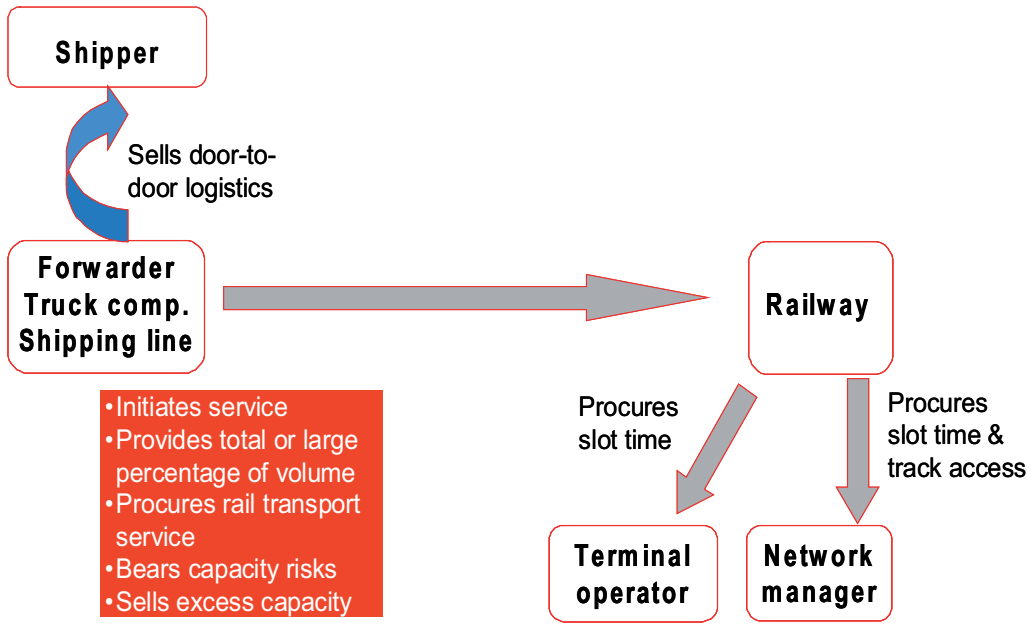
For a long time the supply and demand sides of intermodal services could be clearly distinguished, and actors could be clearly identified as belonging to one or the other sector. The liberalisation of the rail freight market since the 1990s, which enabled every authorised company to provide intermodal and/or rail transport services for example, was key to stimulating competition as well as bringing about the emergence of new business models in intermodal transportation. A business model which has become particularly popular in recent years is the logistics service provider acting as a combined transport operator. The 2007 survey identified at least 31 intermodal companies, which had been created by forwarders, steamship lines, road transport companies or barge operators. *Ambrogio, DHL, ERS, Messina, Pöhland, Wenzel* and *Wincanton*, among others, belong to this category.

Initially, many of these companies developed intermodal services so these could serve primarily as a closed shop to convey shipments originating from their own logistics. However, most companies quickly assumed the role of operator by offering spare transport space to other users in order to improve their capacity employment rate, and as this area of

business grew, to specifically arrange intermodal services for third parties. Some of these new operators even brought integration further by obtaining a railway undertaking licence and/or obtaining terminal handling facilities.

By establishing proprietary intermodal services the logistics service providers extended their value chains and achieved increased integration of the supply chain. They also "eliminated" the role of the generalist operator as a broker, at least for the shipments which were transported by their own services (see ***Figure 3***). At the same time however, most of these logistics service providers were utilising other operators' combined transport services on trade lanes that they did not yet operate on themselves.

**Figure 3: Business model III: logistic service provider acting as an operator**




*Source: KombiConsult*

### Results of the survey

The survey revealed that approximately one third of all 105 intermodal service providers belonged to one of the three categories. This highlighted the tremendous dynamism of the intermodal transportation sector since this industry was deregulated. Until around 10 years ago, logistics service providers such as forwarders, shipping lines or transport companies were customers to intermodal operators and were less committed to developing intermodal

services of their own. The intermodal market is now divided between railway undertakings and generalist intermodal operators, the latter having a predominant position, especially in terms of market shares. In 2007, their share of the total intermodal volume in Europe was estimated at around 80 percent.

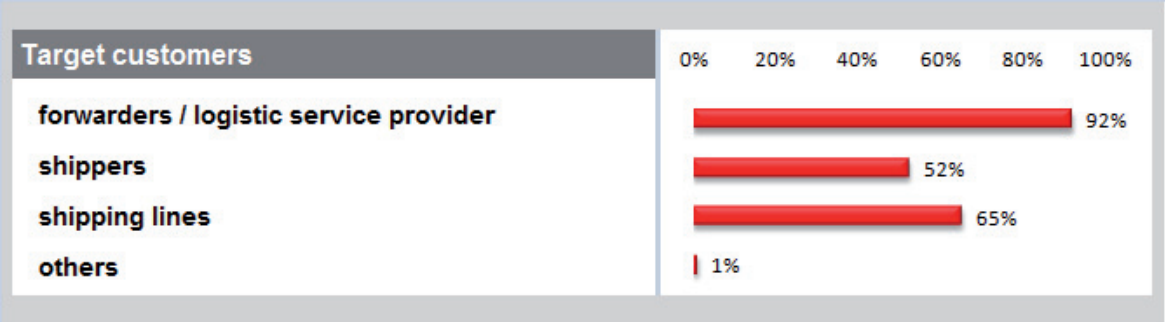
## 1.3 Intermodal service providers' range of services

This chapter analyses the marketing approach of intermodal service providers in 2007, with a particular focus on the extent to which they have been covering intermodal market segments, the extent of their involvement in the logistics value chain and whether their approach has an impact on market shares.

### Market positioning

The most important target group for the sale of intermodal services was still the forwarding and logistics industry. 92 percent of all intermodal operators declared that they were targeting this customer category (see ***Figure 4***). This roughly constituted a 25 percent increase since 2005. In fact, only intermodal operators with a background as logistics service providers themselves (business model III), or those specifically targeting container hinterland services for shipping lines did not position their services on the forwarder market.

**Figure 4: Importance of target customer groups in 2007**




*Source: 86 intermodal service providers*

In 2007, slightly over 50 percent of all intermodal service providers offered their train capacities to shippers. This was the same percentage as in 2005. In contrast, the importance

of shipping lines as a target customer group increased by 8 percent within this two-year period. This reflected the recent boom in global container traffic and European hinterland transportation, which one the one hand prompted existing intermodal operators to broaden their customer base, and on the other hand created momentum for some logistics service providers to enter the intermodal market.

Those who answered “other customers” meant road transport companies or other intermodal companies that could book transport space on their trains.

**Range of intermodal services**

Combined rail/road transport in Europe consists of four market segments. With regard to the origin and destination of the cargo transported, a distinction can be drawn between two basic market segments:

- Container hinterland traffic is the transport of freight containers between sea ports and inland areas. The containers almost exclusively carry trans-continental cargo, i.e. goods with an overseas origin or destination, and only a very small proportion of them contain European freight transported by coastal shipping services.
- Continental traffic is the carriage of cargo sourced in and destined for Europe. It includes short-sea traffic, for example traffic in between the UK and continental Europe, between inland terminals and ferry port facilities. For continental traffic intermodal customers usually use “European” equipment, i.e. domestic freight containers, swap bodies, or liftable semi-trailers.

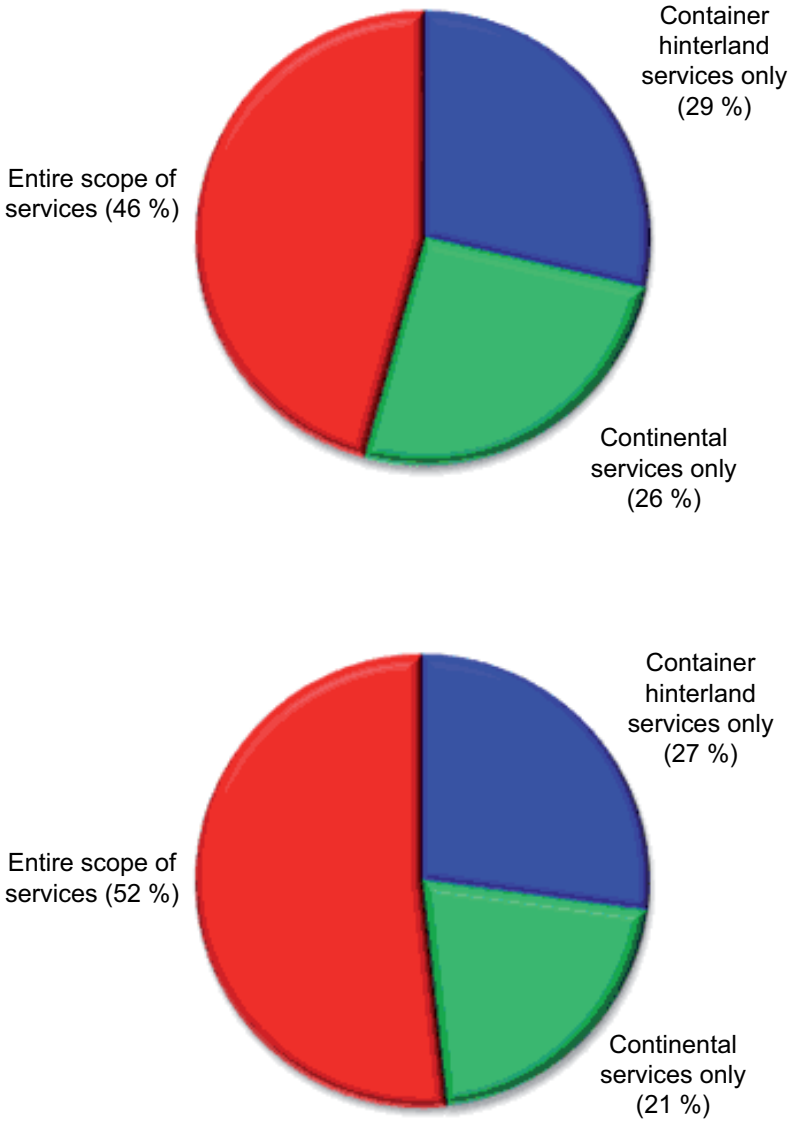
In geographical terms a distinction can be made between domestic and international services. Domestic or national intermodal transport signifies services which are entirely provided on the rail network of a single European country, while international services cross at least one international border. Each of the categories of intermodal transportation can be combined, resulting in the four market segments presented (see ***Figure 5)***.

The following analysis is based on the information given by 70 intermodal service providers, who made available a full data set on their market approach and precise traffic volumes. Moreover, in order to avoid a distortion of results we left out data from railways only carrying intermodal shipments as part of conventional wagonload services.

**Figure 5: Intermodal market segments**

| | Continental traffic | Container hinterland traffic |
|---|---|---|
| Domestic services | X | X |
| International services | X | X |

**Figure 6: Market segments served by intermodal service providers in 2007: by number of companies per category (top); by companies per category weighted according to TEU volume (bottom)**




*Source: 70 intermodal service providers*

The analysis shows that in 2007 46 percent of all intermodal service providers delivered both continental and container hinterland services (see ***Figure 6***). This constitutes a 7 percent increase since 2005. A more detailed analysis of individual data sets showed that this increase partly resulted from an increase in the number of companies, but that it was especially due to a change in market positionings. Companies in particular that were previously focusing on continental traffic had extended their portfolios and were now also operating on the maritime container market. However, to some extent such a step was less of a clear strategic change than an operational necessity aimed at ensuring an increase in the capacity load factor of block trains. The growing number of intermodal "all-rounders" brought about a decrease in the proportion of companies exclusively carrying continental shipments, from 31 to 26 percent, whereas the category consisting of intermodal service providers operating container hinterland traffic maintained its share.

The diagram at the bottom of ***Figure 6*** shows the shares of each of the three categories of intermodal service providers, when weighted according to intermodal traffic volume. Surprisingly, this weighting had less influence on their corresponding market shares than it did at the time of the previous survey. In 2005, companies that supplied either container hinterland services or the entire range of services had a considerably higher share of the total intermodal traffic volume than they represented in number of companies. Conversely, the market share of operators focusing on continental shipments decreased almost by half.

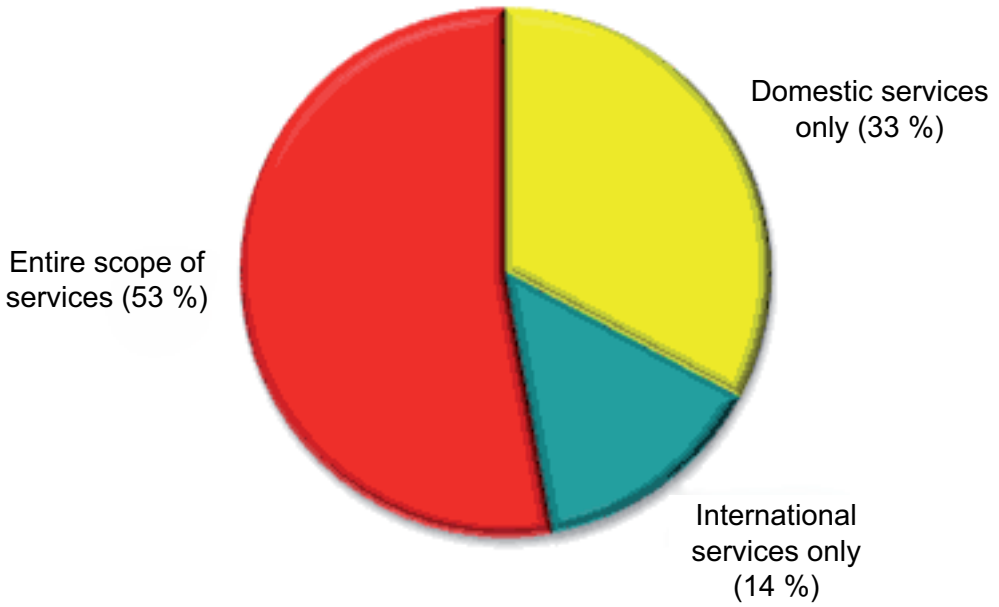
However, concerning the geographical coverage of intermodal services, the 2007 survey confirmed an observation made in 2005: the broader the range of services, the higher the market share (see ***Figure 7***). In 2007, 53 percent of the 70 intermodal companies included in this analysis provided services both domestically and internationally. When weighted according to TEU traffic volume the market share of this category of service providers was as high as 73 percent. Comparative figures for 2005 were 45 and 68 percent.

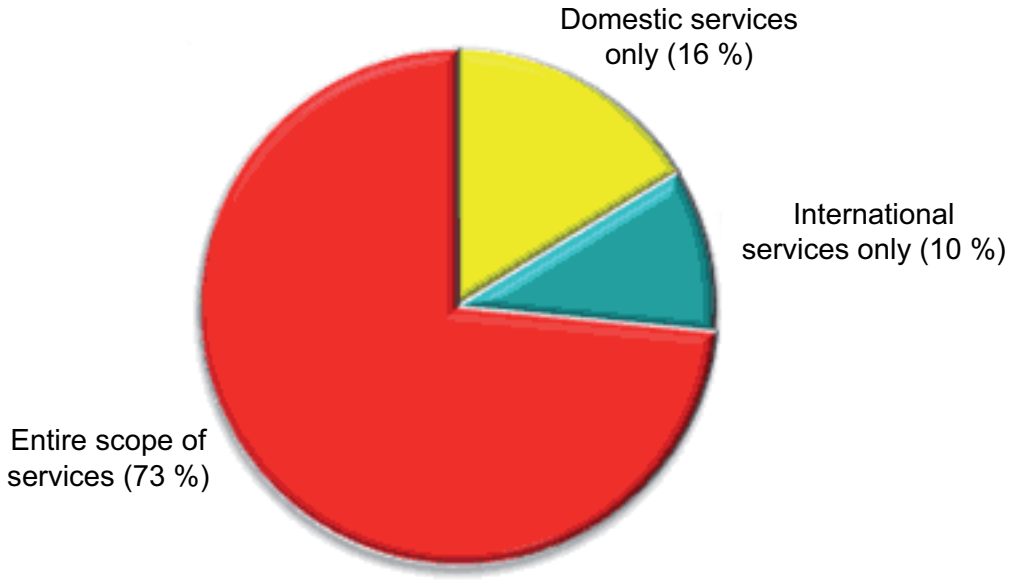
These results also highlighted the fact that an orientation towards the European freight market seemed to be paying off, at least in terms of volume. The category of intermodal service providers only serving domestic markets at the time of the survey made up 33 percent of the total number of companies. However, weighted according to traffic volume

the market share of this type of operator was virtually halved. This weighting had less influence vis-à-vis intermodal operators focusing entirely on international services. Only 14 percent of the entire industry positioned itself in this category, which corresponded to a 10 percent share of the total traffic volume in 2007.

In 2007, similarly to what was observed in 2005, around 40 percent more companies operated domestic rather than international container hinterland services (see ***Figure 8***). In fact, a fairly high proportion of intermodal service providers were fully focused on their respective domestic markets. This was particularly true of operators in Italy, Sweden, the UK, and to a lesser extent Germany. Moreover, with many operators supplying all kinds of container hinterland traffic, the percentage of containers transported on international lanes was low compared to the volume transported domestically. The bulk of international container hinterland traffic was actually carried out by an exceptionally small number of operators, such as *ERS*, *Metrans*, *ICA* and *ICF*.

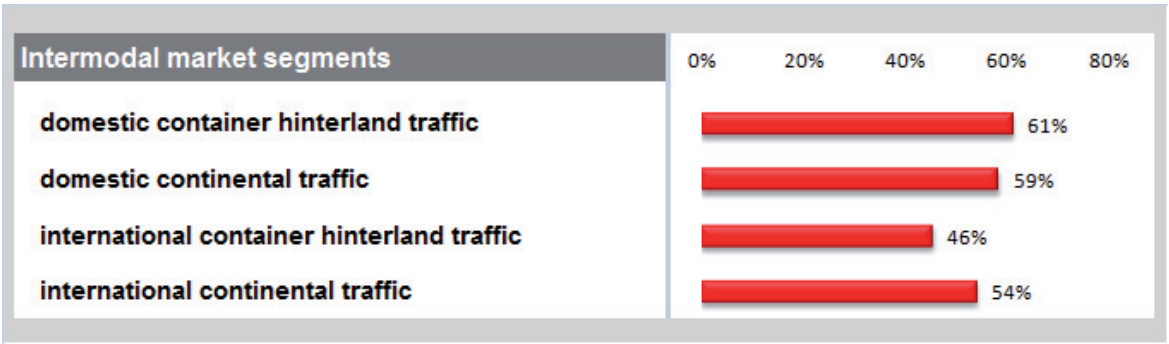
**Figure 7: Market segments served by intermodal service providers in 2007: by number of companies per category (top) and by companies per category weighted according to TEU volume (bottom)**






*Source: 70 intermodal service providers*

**Figure 8: Market segments served by intermodal service providers in 2007**



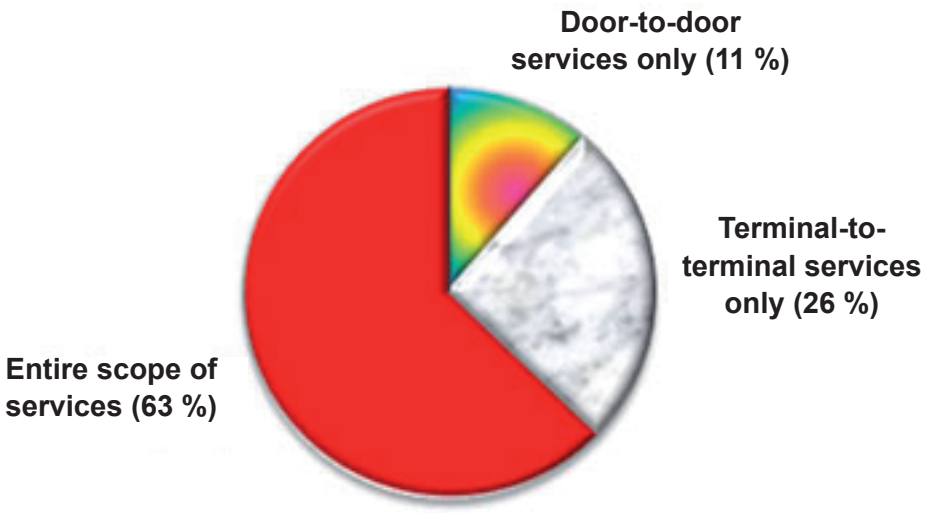

*Source: 70 intermodal service providers*

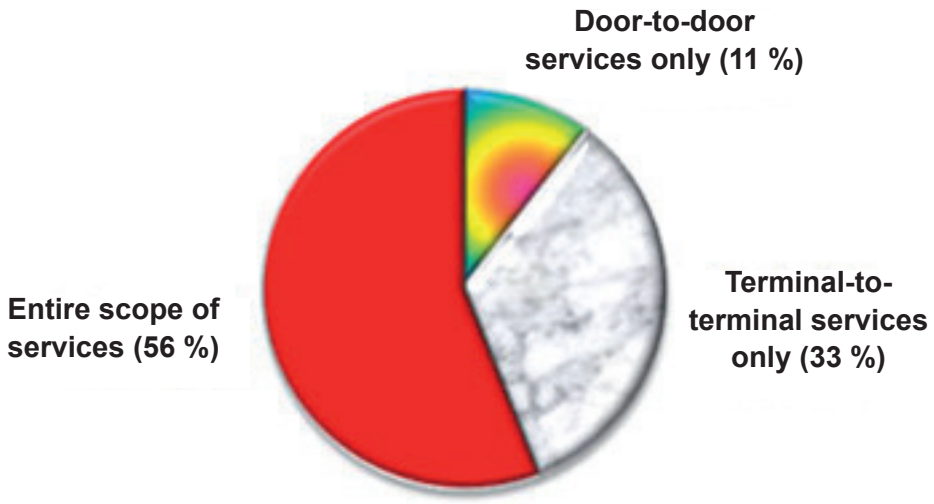
The continental intermodal freight market gives a completely different picture. In 2007, the number of companies providing domestic services for continental cargo was roughly equal to the number of companies providing international ones. This showed that in domestic traffic continental intermodal services were still facing rather stiff competition against road, despite a tremendous increase in costs for the latter, and this competition was much fiercer

than in container hinterland traffic. Against this background, it was obvious that intermodal operators serving the continental market were generally much more concerned with European cross-border traffic than container operators.

The proportion of intermodal service providers covering the entire intermodal supply chain continued to increase between 2005 and 2007. In 2007, 74 percent of all companies (70% in 2005) offered door-to-door or port-to-door services, including intermodal rail journeys, either exclusively or at least as part of their services. However, what was surprising and in contrast to all other investigations into the service portfolio of intermodal companies was that operators providing a broader range of services had 7 percent less market share when weighted according to traffic volume (see ***Figure 9***). The proportion of intermodal operators clearly focusing on terminal-to-terminal services fell to 27 percent (30% in 2005). But obviously this kind of market positioning was relatively successful since they had a 33 percent share of consolidated intermodal volume.

**Figure 9: Extent of intermodal supply chain integration 2007: by number of companies per category (top) and by companies per category weighted according to TEU volume (bottom)**






*Source: 70 intermodal service providers*

**Level of competition between intermodal service providers**

In the early 1990s, the intermodal market consisted of around 20 independent companies, in addition to the state railways which also offered intermodal transport services. The 2007 survey of the European intermodal industry identified a total of 105 companies, 86 of which were independent intermodal service providers, in addition to the rail freight organisations that had emerged from former or still existing state railways.

These figures suggested that competition on intermodal services was generally becoming more intense. The service schedules of intermodal companies gave weight to this idea. An increasing number of international trade lanes, especially those with high regular volumes, were being served by various intermodal operators. However, the level of competition on trans-European corridors seemed to depend on how swiftly and effectively the domestic rail freight markets involved this type of journey had been liberalised. In essence the conclusion was that the more liberalised the market, the broader the range of services for customers to choose from.

This was also true for domestic intermodal markets. European countries that had liberalised access to rail freight and rail traction services relatively early saw their number of intermodal service providers increase considerably. Liberalisation brought about both a supply of additional services on routes and markets not served previously, and more competition on existing markets. The success of this policy was particularly visible in countries such as Germany, the Netherlands, Sweden, or the United Kingdom.

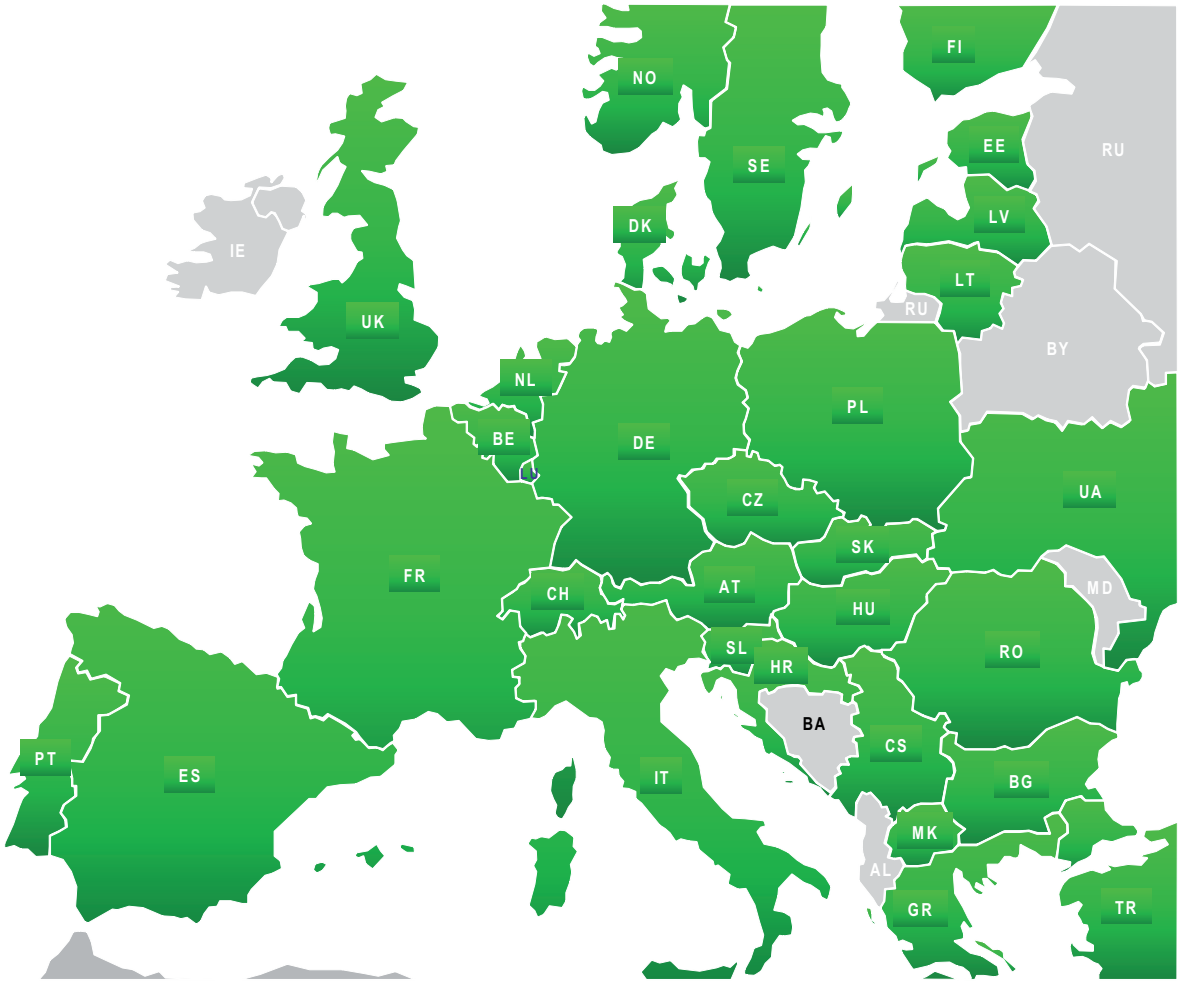
# 2 Unaccompanied intermodal rail/road traffic in 2007

## 2.1 Traffic volume in 2007

The 2007 survey on European intermodal transportation was successful in obtaining statistics on the volume of unaccompanied rail/road traffic from most of the 105 intermodal service providers identified, either directly, by means of a questionnaire, or indirectly, via publicly accessible sources (websites, annual reports). The availability of statistical data from national offices for statistics and railway undertakings providing train operation services for intermodal operators made it possible to cross-check this information and complete data sets regarding domestic and corridor-related traffic volumes. In very few cases, which are explained in the relevant section of this report, we made estimates based on operator evaluations or our own expertise, for example when an operator only counted its tonnage but not the volume in TEU.

This study ensured a very broad extent of coverage for intermodal rail/road traffic in and between practically all European countries. We were even able to record at least part of the traffic volume for countries from which we did not receive any detailed data, such as Bosnia, Serbia, Turkey or Ukraine. We used information from companies operating intermodal services on those corridors as a basis (see ***Figure 10*** overleaf).

**Figure 10: European countries covered by the intermodal market survey**




*Source: KombiConsult*

## 2.2 Intermodal traffic by market segment

According to our survey, 172.2 million gross tonnes[1] of cargo were transported by unaccompanied combined rail/road traffic in Europe in 2007. 17.2 million twenty-foot equivalent (TEU) intermodal units were used to carry this tonnage (see ***Figures 11-12***). This amounted to around 37 percent more than in 2005, when the study of the European intermodal industry had recorded a volume of 125.3 million gross tonnes and 12.7 million TEU (see also *Chapter 2.4,* ***Figure 18***)***.***

Based on the results of our 2007 survey, the situation of unaccompanied intermodal traffic can be described in the following way (see ***Figures 11-12***):

(1) In 2007, 97.2 million tonnes of goods were shipped on domestic intermodal services in all European countries covered by this survey. This represented a 35.5 percent increase since 2005 (see also ***Figure 17***). Nearly reaching the 100 million tonne mark in 2007, domestic traffic had a share of 56.5 percent of total intermodal freight, only 0.7 percent less than in 2005. In terms of TEU, domestic intermodal traffic increased sharply to reach 9.9 million TEU, which amounted to 57.8 percent of the entire market, a slightly higher share than two years before. It should be noted that for both the 2005 and the 2007 surveys we applied a strictly territorial concept of domestic intermodal transport, in order to comply with other statistical records. This meant that any unit conveyed on an intermodal service between two terminals located in a single country had been registered as a “domestic” intermodal shipment, notwithstanding whether the underlying flow of goods was domestic or cross-border.

(2) On international services, intermodal service providers reached a volume of 75 million tonnes or 7.2 million TEU in 2007, amounting to shares of 43.5 and 42.2 percent respectively in the total European intermodal rail/road market. Since 2005 the volume of this market segment had increased by almost 40 percent (see ***Figure 18***).

(3) 56 to 57 percent of the entire intermodal volume in Europe could be classified as container hinterland traffic. These percentages amounted to 96.3 million tonnes and 9.8 million TEU respectively. The difference between the maritime and continental

1 Gross tonnes include weight of goods and tare weight of intermodal loading unit employed but not the weight of wagons, locomotives or similar means of transport

intermodal markets was thus essentially the same as in 2005. Container hinterland transport was still extremely strong on domestic markets. Moreover, 67 percent of this traffic was carried on domestic services in 2007, and container hinterland transport now represented around two thirds of the entire domestic intermodal volume.

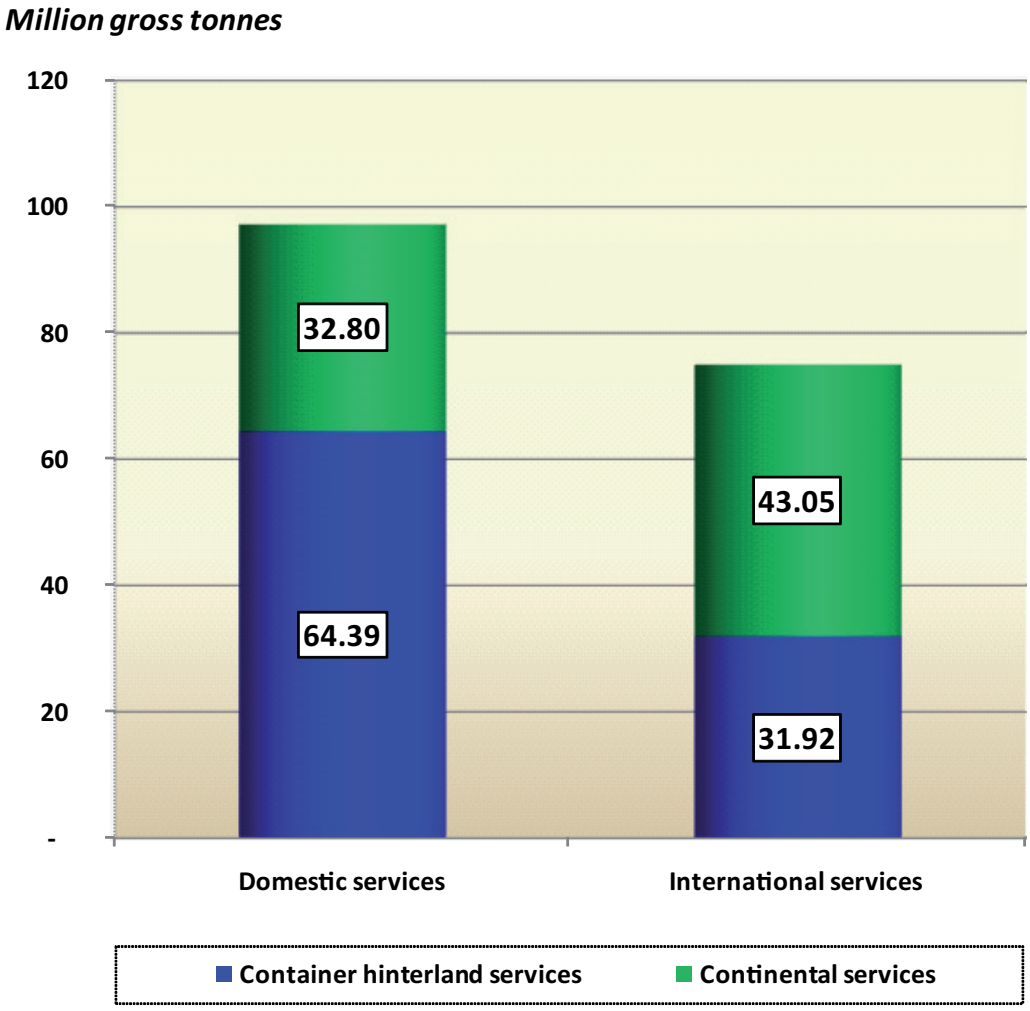
(4) The strongholds of continental intermodal traffic were the international, trans-European trade lanes, on which intermodal companies transported 43 million tonnes of cargo in 4 million TEU of units in 2007. This means that there was around 30 percent more continental freight (17 percent in TEU) than what was carried on domestic services (32.8 million tonnes; 3.4 million TEU).

(5) The strength of continental cargo in international combined transportation was also reflected, by a market share of over 55 percent against container hinterland movement. However, the maritime market segment had grown considerably faster in the space of two years and increased its market share by approximately 9 percent, from 36 percent in 2005. On the other hand, in domestic traffic intermodal service providers had achieved higher growth rates with continental volumes and raised their market share by 5 percent, from around 29 percent to 34 percent.

(6) The average gross weight of all shipments transported on intermodal services in 2007 amounted to 10.1 tonnes per TEU. This represented an increase since the 2005 survey, when we had recorded a mean gross weight of 9.9 tonnes per TEU. Nevertheless, it was amazing that our survey results confirmed what industry experts usually indicated as a rule of thumb when asked for their assessment. In continental intermodal traffic, with 10.3 tonnes per TEU the mean gross weight was significantly higher than the industry average, whereas containers in hinterland traffic transported slightly less tonnage on average (9.9 tonnes per TEU). This also had an impact on the average gross weight in domestic intermodal traffic, which amounted to 9.8 tonnes per TEU, as opposed to 10.4 tonnes per TEU on international services. Moreover, continental shipments also included far less tonnage in domestic traffic than in cross-border traffic.

**Figure 11: Unaccompanied intermodal rail/road traffic by market segment: goods transported in 2007**

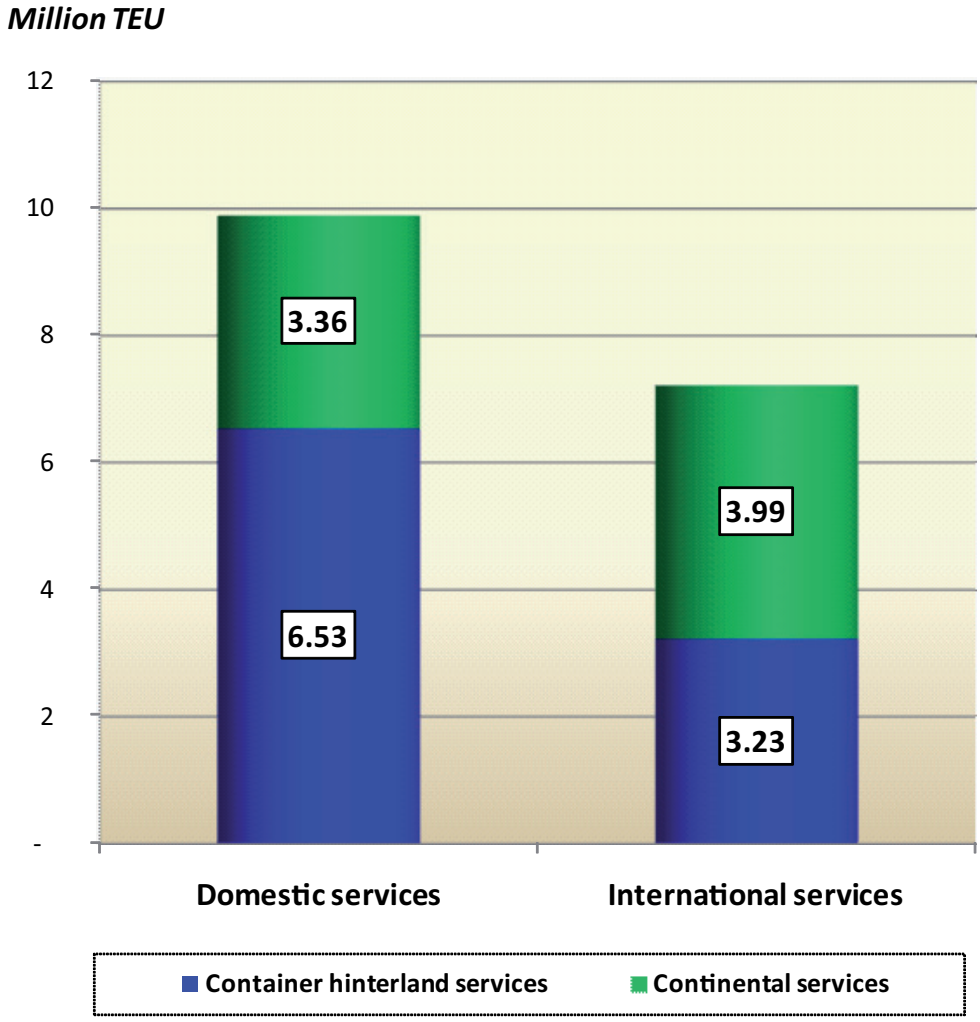
| Market segment | Gross tonnes | | |
|---|---|---|---|
| | Continental intermodal traffic | Container hinterland intermodal traffic | Total intermodal traffic |
| Domestic services | 32,798,240 | 64,393,805 | 97,192,045 |
| International services | 43,045,700 | 31,923,263 | 74,968,963 |
| Total services | 75,843,940 | 96,317,068 | 172,161,008 |




*Source: KombiConsult analysis, UIRR*

**Figure 12: Unaccompanied intermodal rail/road traffic by market segment: TEU carried in 2007**

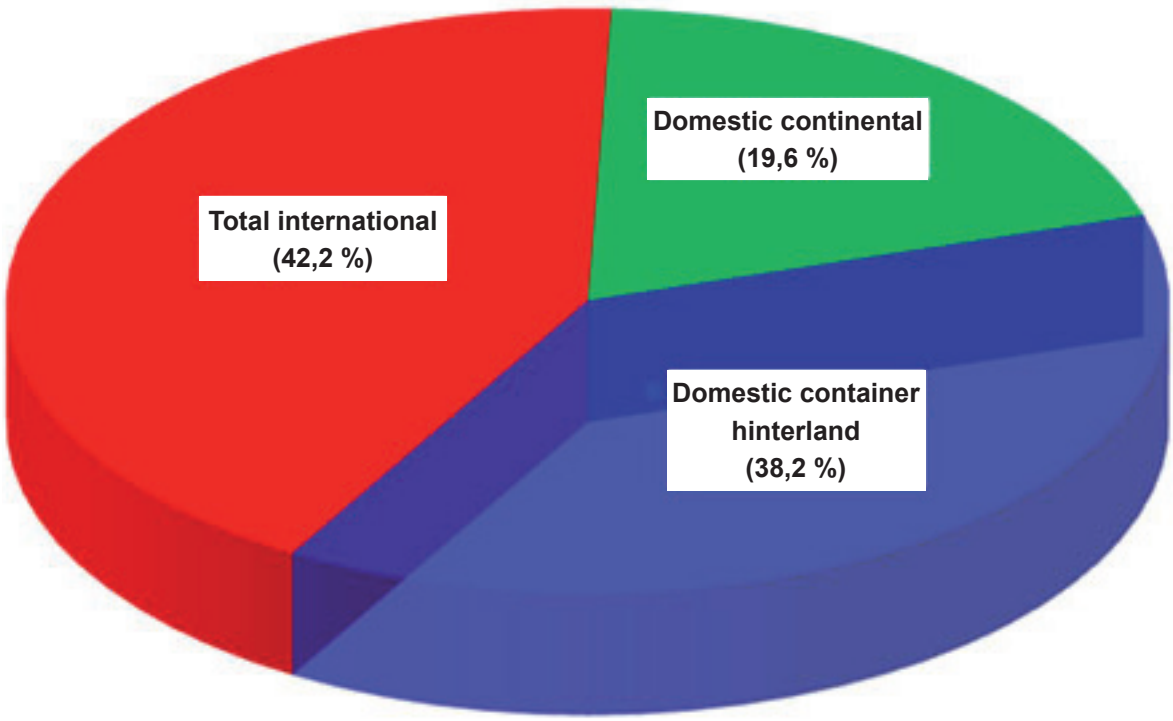
| Market segment | TEU | | |
|---|---|---|---|
| | Continental intermodal traffic | Container hinterland intermodal traffic | Total intermodal traffic |
| Domestic services | 3,359,223 | 6,534,343 | 9,893,566 |
| International services | 3,993,632 | 3,225,622 | 7,219,254 |
| Total services | 7,352,855 | 9,759,965 | 17,112,820 |




*Source: KombiConsult analysis, UIRR*

As was mentioned earlier, the statistical analysis followed conventions on differentiating domestic and international transport. On this basis domestic intermodal traffic had a predominant position in cross-border movements, particularly owing to the massive volumes of maritime containers transported on hinterland services. However, if the latter market segment were classified as international traffic, as was the case in the UK or the US, since the underlying cargo flows were in fact international the market share of international intermodal traffic would rise to 80.4 percent rather than 42.2 percent (see ***Figure 13***).

**Figure 13: Importance of international freight in European intermodal traffic (according to TEU volumes) in 2007**




*Source: KombiConsult analysis*

## 2.3 Domestic intermodal traffic by country

Domestic intermodal rail/road transport in Europe totalled approximately 100 million tonnes and 10 million TEU. On the basis of data sets supplied by intermodal operators and railway undertakings, the volume of traffic per country could be determined fairly precisely.

The 2007 survey produced the following general findings:

- Container hinterland traffic clearly was leading in domestic intermodal volume, not only in the overall result but also – with very few exceptions – in all European countries involved in this analysis.
- The amount of domestic intermodal traffic varied greatly from country to country.
- A small number of countries were dominating the market segment.
- It was not entirely clear which conditions were beneficial or unfavourable in stimulating combined traffic on the domestic level, apart from having a sizeable container port.

In 2007, the largest domestic intermodal volumes were recorded in Germany (27m tonnes), Italy (15m tonnes), the United Kingdom (12m tonnes), Sweden (6m tonnes), Belgium (6m tonnes), and Spain (5m tonnes). Together they made up almost 75 percent of total domestic intermodal traffic in Europe. Even just the top three countries, Germany, Italy and the United Kingdom, represented a market share of 55 percent (see ***Figures 14-15***).

What the six countries have in common is sizeable container ports. Container hinterland services represented by far the greatest contribution to total domestic tonnages. However, a closer examination also revealed major differences and suggested that considerable intermodal movements could be carried out under particular conditions:

- While all above mentioned countries – except for Belgium – have vast territories, it was only in Germany, Spain and Sweden that most containers were shipped on great distances between ports and major economic centres. In other words these were conditions which generally favoured combined transportation. In the other three countries, and particularly in Belgium, a high proportion of container hinterland traffic took place on comparatively short distances of 200 to 350 kilometres.
- The domestic intermodal markets in Germany, Sweden and the United Kingdom included one or two leading service providers but also many other players, in particular companies that had only entered the intermodal markets in recent years. Moreover, these countries had achieved quite a high level of competition regarding rail traction for domestic intermodal services.
- In Italy, quite a high number of intermodal operators were contributing to total container hinterland traffic, but all services, except for a very small volume, were operated by the same railway undertaking. In Belgium one operator and one train operating company were serving the market for the time being. In Spain the two roles were even combined within one company.

**Figure 14: Domestic intermodal rail/road traffic in Europe by country in 2007**
(rounded down figures)

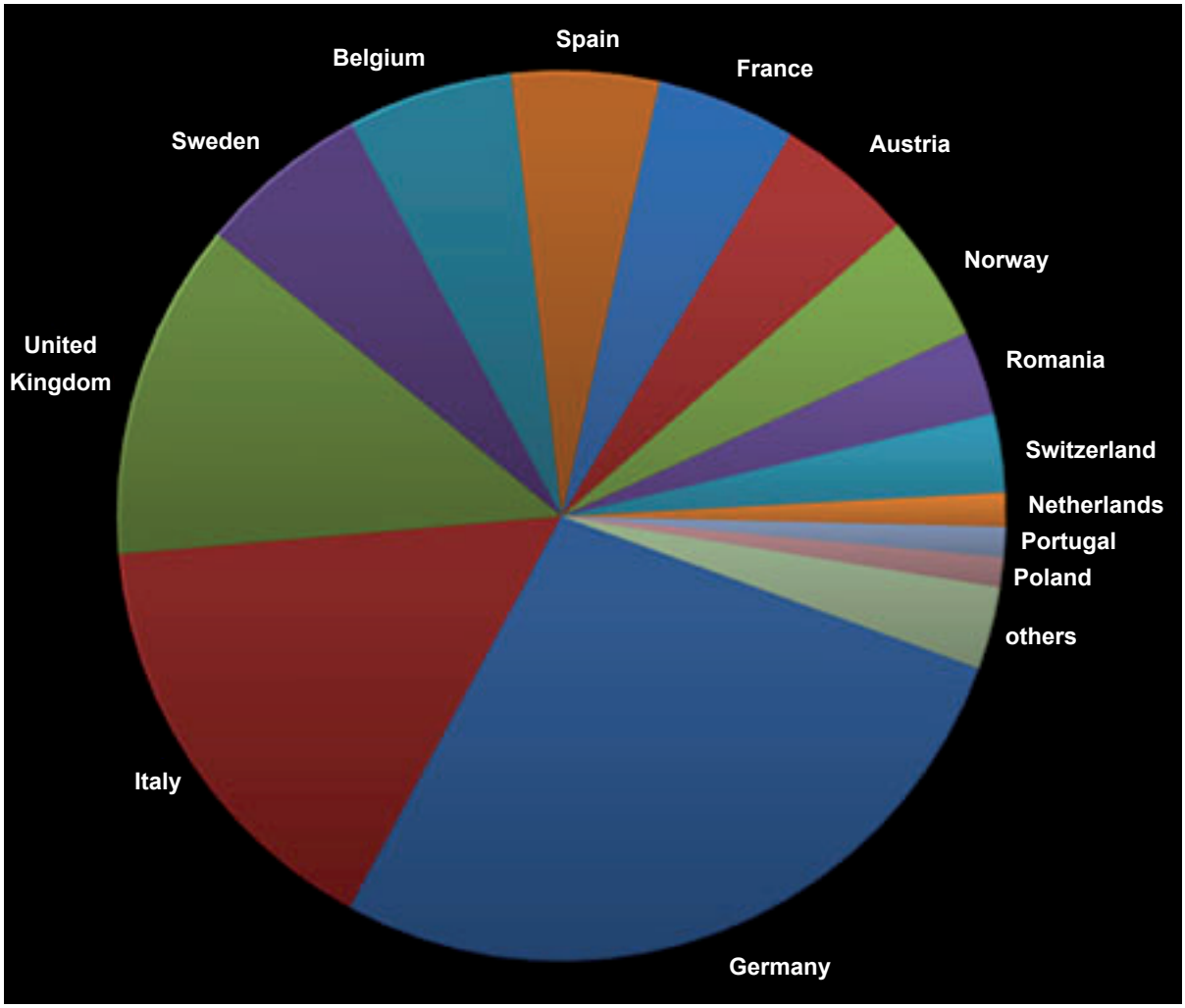
| Country | Domestic intermodal traffic | | | |
|---|---|---|---|---|
| | Gross tonnes | Percentage | TEU | Percentage |
| Austria | 4,893,000 | 5.0% | 552,000 | 5.6% |
| Belgium | 5,860,000 | 6.0% | 601,000 | 6.1% |
| Bulgaria | 78,000 | 0.1% | 8,000 | 0.1% |
| Czech Republic (1) | 913,000 | 0.9% | 76,000 | 0.8% |
| Denmark | 27,000 | 0.0% | 2,500 | 0.0% |
| Finland | 657,000 | 0.7% | 91,500 | 0.9% |
| France | 4,924,000 | 5.1% | 592,000 | 6.0% |
| Germany | 26,594,000 | 27.4% | 2,706,000 | 27.3% |
| Hungary | 45,000 | 0.0% | 2,500 | 0.0% |
| Italy | 15,281,000 | 15.7% | 1,575,000 | 15.9% |
| Lithuania (1) | 100,000 | 0.1% | 10,000 | 0.1% |
| Netherlands (1) | 1,200,000 | 1.2% | 120,000 | 1.2% |
| Norway | 4,462,000 | 4.6% | 425,000 | 4.3% |
| Poland | 1,058,000 | 1.1% | 158,000 | 1.6% |
| Portugal (1) | 1,066,000 | 1.1% | 116,000 | 1.2% |
| Romania | 2,966,000 | 3.1% | 247,500 | 2.5% |
| Slovakia | 44,000 | 0.0% | 5,500 | 0.1% |
| Slovenia (1) | 377,000 | 0.4% | 44,500 | 0.4% |
| Spain | 5,218,000 | 5.4% | 412,500 | 4.2% |
| Sweden | 6,047,000 | 6.2% | 537,000 | 5.4% |
| Switzerland (1) | 2,770,000 | 2.9% | 275,500 | 2.8% |
| Ukraine (1) | 672,000 | 0.7% | 64,000 | 0.6% |
| United Kingdom (1) | 11,940,000 | 12.3% | 1,272,000 | 12.9% |
| Total domestic | 97,192,000 | 100.0% | 9,894,000 | 100.0% |

(1) Volumes partly estimated based on data sets provided by intermodal service providers

*Source: KombiConsult analysis*

Similarly to those in Belgium, intermodal service providers in Austria and Switzerland stood as proof that significant volumes of domestic intermodal traffic could also be generated in countries with key economic centres only 250 to 450 kilometres apart. Usually these distances are not taken into consideration for road-competitive intermodal services. However, intermodal traffic benefits from a favourable legal framework in these countries. In addition, a considerable proportion of domestic volumes actually consisted of international shipments, which were transported on a chain of domestic and cross-border trains via efficient gateway systems. This was also the case for domestic intermodal traffic in the Czech and Slovak Republics for example, as well as in Germany and Italy, albeit to a much lesser extent.

**Figure 15: Shares of domestic intermodal rail/road traffic in Europe by country (in tonnage) in 2007**




*Source: KombiConsult analysis*

Austria, France, Germany, Italy, Norway, and Switzerland were the countries in which a significant or even, in the case of France, Norway and Switzerland, an overwhelming proportion of continental loads was being shipped by domestic intermodal transport. Intermodal companies in these countries, albeit to a lesser extent in Switzerland and Austria, had comparatively large freight flows between economic centres distant by over 450 or 500 kilometres, which could be improved to accommodate intermodal carriages. With the situation as it was at the time of the survey this was likely to be the minimum break-even distance for which intermodal services could be provided at road-competitive costs for domestic continental cargo.

## 2.4 International intermodal traffic

As some intermodal service providers did not supply data on the origin and destination of their intermodal shipments, we were unable to determine the exact volume of each trans-European trade lane or corridor. However, the available database was sufficiently precise for us to identify the largest intermodal corridors and validate the figures for shipped volumes.

As a result the 2007 survey revealed that transalpine corridors had maintained their leading positions in international combined transport. Among these trade lanes, the route between Germany and Italy through Switzerland via the Gotthard and Lötschberg axes was still the largest single intermodal trade lane, with an annual volume of approximately 715,000 TEU. The second largest was the German-Italian intermodal route via Austria, primarily on the Brenner corridor, on which intermodal companies transported around 570,000 TEU in 2007. Over 540,000 TEU of intermodal loading units were shipped between Belgium and Italy via Switzerland.

In stark contrast with domestic intermodal traffic, continental shipments were clearly preponderant in international combined transport in 2007, with around 4 million TEU, as opposed to approximately 3.2 million TEU for container hinterland traffic. Interestingly, on the three top ranking international trade lanes intermodal service providers sourced almost all the cargo in freight flows inside Europe, and, with the exceptions of Belgium and Italy, carried practically no maritime containers.

It transpired that the top non-transalpine intermodal corridors, on which an overwhelming proportion of containers were shipped in hinterland traffic, were only ranked fourth and fifth. These were respectively the bilateral trade lanes between Austria and Germany and the Netherlands and Germany, on which 400,000 to 500,000 TEU were shipped in 2007.

The largest intermodal trade lane involving a country in Central and Eastern Europe was ranked sixth in international traffic volume: on intermodal services between the Czech Republic and Germany, intermodal companies achieved a remarkable result of around 380,000 TEU. We assumed that over 90 percent of the total consisted of overseas containers, laden or empty. Even though the continental volume had increased significantly in recent years, it was still relatively low compared to total international traffic. This was also true of the Germany-Hungary corridor, which represented the second strongest intermodal trade lane involving a CEE country.

Germany not only had the largest domestic intermodal market – its share amounted to 27% of total European domestic traffic – but it was also the country most involved in cross-border intermodal transport. Nearly 45 percent of all international shipments originated in, were destined for or transited through Germany in 2007.

## 2.5 Intermodal traffic between 2005 and 2007

In 2007, unaccompanied intermodal traffic totalled 172.2 million gross tonnes, 37.3 percent more than in 2005. In terms of TEU the year was equally positive for the industry: the volume had increased by approximately 4.5 million TEU – 35 percent – to reach 17.2 million TEU (see ***Figures 16-17*** overleaf). This increase corresponded to a mean annual growth rate of around 17 percent over the previous two years.

To a lesser extent, this strong increase could be attributed to an improved statistical database, made possible by the use of new sources and the discovery of additional intermodal service providers (see *Chapter 2.1*). However, a detailed analysis of intermodal service providers' data sets proved that the highest proportion of growth could by far be ascribed to the substantial improvement of the European intermodal industry. Indeed, even if we deducted the volume recorded in 2007 for intermodal companies that had not been identified during the pioneering 2005 survey, the growth of unaccompanied traffic would still amount to 27 to 29 percent. This would correspond to an average annual growth rate of around 13 percent in the two-year period.

The amount of domestic traffic had risen by over 35 percent within the two-year period. Compared to our 2005 findings, international traffic had increased even more at the time of the 2007 survey, by nearly 40 percent in terms of tonnes, while the TEU figures revealed a smaller increase, of around 34 percent. This reflected the fact that continental freight, which generally has a higher average tonnage per TEU than containers in hinterland traffic, had gained market shares on cross-border intermodal services.

**Figure 16: Intermodal rail/road traffic in Europe: goods shipped between 2005 and 2007**

| Intermodal market segment | Traffic volume (million gross tonnes) | | 2007/2005 % change |
|---|---|---|---|
| | 2005 | 2007 | |
| Domestic services | 71.74 | 97.19 | 35.5% |
| International services | 53.61 | 74.97 | 39.8% |
| Total volume | 125.35 | 172.16 | 37.3% |

*Source: UIC: Report on CT in Europe 2005. Paris 2006; KombiConsult database*

**Figure 17: Intermodal rail/road traffic in Europe: TEU carried between 2005 and 2007**

| Intermodal market segment | Traffic volume (million TEU) | | 2007/2005 % change |
|---|---|---|---|
| | 2005 | 2007 | |
| Domestic services | 7.29 | 9.89 | 35.7% |
| International services | 5.38 | 7.22 | 34.2% |
| Total volume | 12.67 | 17.11 | 35.0% |

*Source: UIC: Report on CT in Europe 2005. Paris 2006; KombiConsult database*

Since there were no official European statistics on intermodal traffic to date, the only reliable source of intermodal transportation statistics was UIRR, the association of intermodal operators. It provided a time-series of statistical data on its members' activities since 1970. As the scope of this record was inevitably restricted to UIRR members, it did not take into account the entire European intermodal industry.

Prior to the two pioneering projects commissioned by UIC, the Capacity Study and the DIOMIS project, the last extensive survey on combined transport dates back to 1988. It focused on international traffic. We were thus able follow the evolution of this intermodal market segment: in 20 years the volume of unaccompanied combined transport on cross-border services increased from 14 to 75 million gross tonnes. In other words, intermodal companies shipped more than five times more goods in 2007 than in 1988 (see ***Figure 18***).

**Figure 18: International intermodal rail/road traffic in Europe: goods transported in 1988, 2002, 2005 and 2007**

| | 1988 | 2002 | 2005 | 2007 |
|---|---|---|---|---|
| **Traffic (million gross tonnes)** | **14.0** | **44.1** | **53.6** | **75.0** |
| **Index** | **100** | **315** | **383** | **536** |

*Source: AT Kearney (1989); UIC: Capacity Study (2004); UIC: Report on CT in Europe 2005 (2006); KombiConsult database*

## 2.6 Intermodal traffic involving CEE countries between 2005 and 2007

The 2007 survey provided the opportunity to carry out a more in-depth analysis of the current situation and the recent development of unaccompanied intermodal traffic involving Central and Eastern European (CEE) countries (see ***Figure 19*** overleaf):

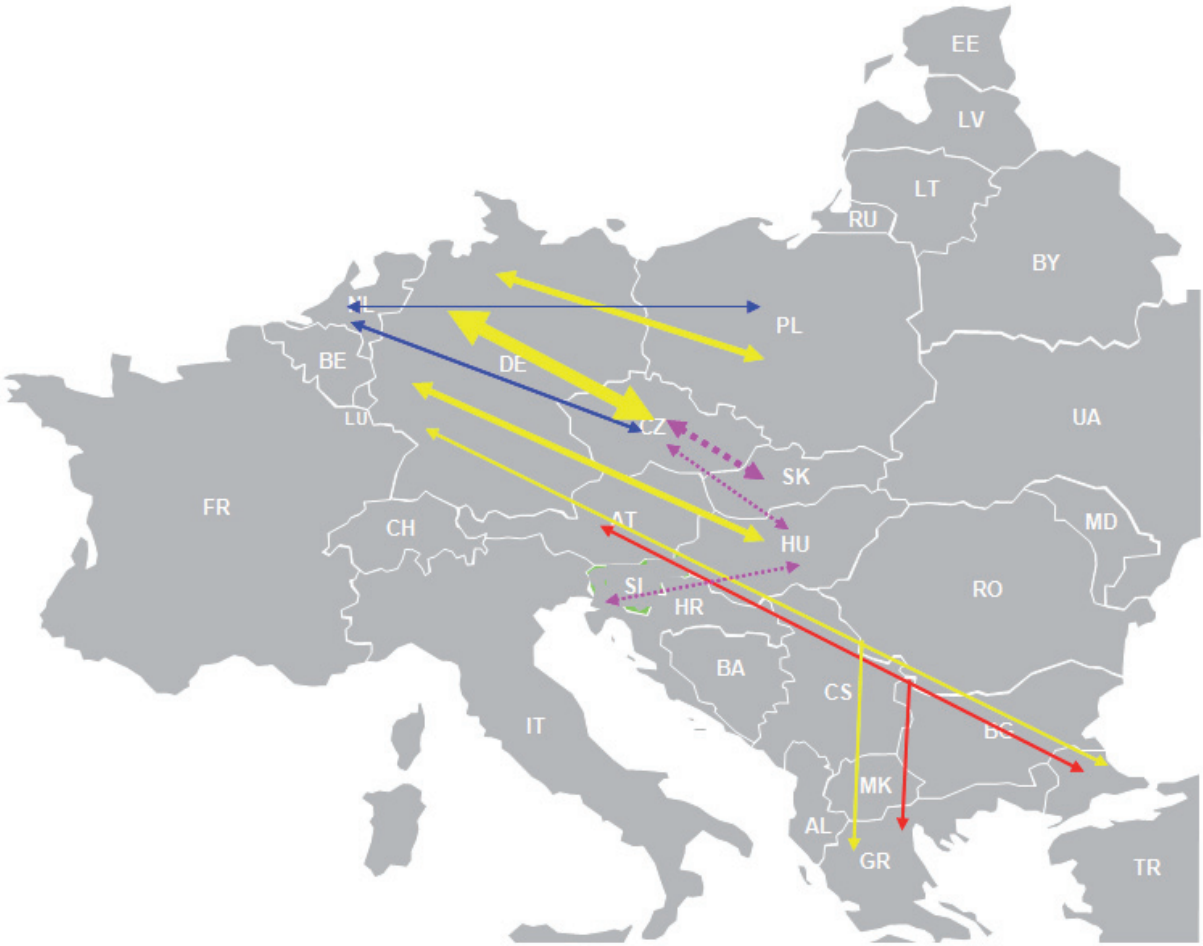
- What was immediately striking was that the consolidated domestic intermodal traffic involving these countries had grown twice as fast as the total European domestic market. Since 2005 it had risen by almost 80 percent, to reach 616,000 TEU. This was all the more remarkable as all CEE countries except for Ukraine had already been covered in the 2005 survey.
- The share of container hinterland traffic in the domestic volume, either shipped between domestic sea ports and inland terminals or forwarded on a combined domestic-international gateway service, was of 90 to 95 percent, thus significantly higher than in western European countries.
- In 2007, intermodal companies achieved by far the highest volumes of domestic shipments in Romania and Poland. A substantial quantity of intermodal units was also conveyed in the Czech Republic and Slovenia, particularly containers to/from ports.
- The increase in the number of intermodal shipments on international services involving CEE countries, in export, import or transit, had exceeded European average growth by 145 percent between 2005 and 2007. Though this sector was also dominated by container hinterland traffic, over the past years intermodal service providers had been successful in launching services specifically targeted at continental cargo. As a result this intermodal market segment had increased its share to nearly 75 percent, despite the recent boom in transcontinental container movements.
- In terms of TEU volume, the trade lane between the Czech Republic and Germany was a clear leader in international corridors involving CEE countries in 2007. The trade lanes ranked immediately underneath were Germany-Hungary, Germany-Poland and the Netherlands-Czech Republic (see ***Figure 20***). All of them were dominated by container hinterland traffic.
- Due to tremendous growth in the space of two years, CEE countries significantly increased their involvement in European intermodal traffic, reaching a share of around 16 percent of the total market.

**Figure 19: Intermodal rail/road traffic involving Central and Eastern European countries: goods transported between 2005 and 2007**

| Intermodal market segment | Million TEU | | % growth 2005-2007 |
|---|---|---|---|
| | 2005 | 2007 | |
| Domestic traffic in CEE countries | 345,000 | 616,000 | 78.6% |
| International traffic involving CEE countries | 875,000 | 2,146,000 | 145.3% |
| Total CEE countries | 1,220,000 | 2,762,000 | 126.4% |
| ***Percentage of total European traffic*** | ***9.6%*** | ***16.1%*** | - |

*Source: KombiConsult analysis*

**Figure 20: Major international intermodal trade lanes involving CEE countries: 2007**




*Source: KombiConsult*

## 2.7 Intermodal container hinterland traffic of European sea ports

For this 2007 report we carried out a special investigation into the intermodal hinterland traffic of European container ports. However, our first step was to create an extensive database on the seaborne container throughput of ports, regardless of whether or not there was container hinterland traffic. This overview covering the 1997 to 2007 period, where data was available, is presented in ***Figure 21*** (see following pages).

Our second step was to search for statistical data on total container hinterland traffic and particularly the market share of containers transported on intermodal rail/road services. Unfortunately only a small number of sea port authorities or container terminal operators were making reports on this issue in particular. In order to obtain more information we therefore analysed the database of our 2007 survey first of all, to attribute container flows to ports, and secondly took various other sources into account. The results are presented in ***Figure 22*** and represented on a map in ***Figure 23.***

We made two analyses on the basis of this data. First of all, the container volume carried on rail hinterland services was compared to the total seaborne container throughput. However, this ratio could be somewhat misleading, especially for sea ports which constituted major hubs, such as Algeciras or Gioia Tauro. A much better way of gauging the importance of rail was to compare intermodal container volume to total container hinterland traffic. In this case the lack of data was even greater.

In absolute figures the port of Hamburg was a clear market leader in Europe for rail-based container hinterland traffic. In 2007, over 1.8 million TEU were transported on intermodal services in that port. Only around half this volume was shipped on intermodal rail services to and from Rotterdam. Regarding the percentage of rail volume against total hinterland traffic, the ports of Zeebrugge, Bremen/Bremerhaven and in all likelihood Göteborg and Koper had excellent results, with a rail market share exceeding 40 percent.

**Figure 21: Container ports in Europe: seaborne container throughput between 1997 and 2007**

*(Source: Ports' websites; Containerisation International, Cargo Systems, Hamburg Port Authority)*

| Port | Seaborne container throughput (in TEU) | | | | | | | | | | | Percentage change | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | 2007/2002 | 2007/1997 |
| Rotterdam | 10,790,604 | 9,653,232 | 9,288,399 | 8,291,994 | 7,143,918 | 6,506,311 | 6,096,142 | 6,093,570 | 6,340,497 | 5,995,352 | 5,494,628 | 65.8% | 96.4% |
| Hamburg | 9,889,792 | 8,861,804 | 8.087,545 | 7,003,479 | 6,137,926 | 5,373,999 | 4,688,669 | 4,248,247 | 3,738,307 | 3,546,940 | 3,337,477 | 84.0% | 196.3% |
| Antwerpen | 8,176,614 | 7,018,799 | 6,482,029 | 6,063,746 | 5,445,437 | 4,777,151 | 4,218,176 | 4,082,334 | 3,614,246 | 3,265,750 | 2,969,189 | 71.2% | 175.4% |
| Bremen/Bremerhaven | 4,892,087 | 4,444,389 | 3,743,969 | 3,469,253 | 3,189,853 | 3,031,587 | 2,972,882 | 2,751,793 | 2,201,210 | 1,811,014 | 1,705,089 | 61.4% | 186.9% |
| Gioia Tauro | 3,445,337 | 2,938,176 | 3,160,981 | 3,261,034 | 3,148,662 | 2,954,571 | 2,488,332 | 2,652,701 | 2,202,951 | 2,093,669 | 1,448,531 | 16.6% | 137.9% |
| Felixstowe | 3,300,000 | 3,080,000 | 2,760,000 | 2,717,000 | 2,482,000 | 2,684,000 | 2,800,000 | 2,793,217 | 2,696,659 | 2,461,823 | 2,251,379 | 23.0% | 46.6% |
| Algeciras | 3,414,345 | 3,256,614 | 3,179,300 | 2,937,381 | 2,517,318 | 2,234,248 | 2,151,770 | 2,009,122 | 1,832,557 | 1,825,614 | 1,537,627 | 52.8% | 122.1% |
| Valencia | 3,042,665 | 2,612,049 | 2,409,821 | 2,145,236 | 1,992,903 | 1,821,005 | 1,506,805 | 1,308,010 | 1,170,191 | 1,005,397 | 831,510 | 67.1% | 265.9% |
| Le Havre | 2,638,000 | 2,137,828 | 2,118,509 | 2,131,833 | 1,984,542 | 1,720,459 | 1,523,493 | 1,464,900 | 1,378,379 | 1,319,278 | 1,184,729 | 53.3% | 122.7% |
| Barcelona | 2,610,099 | 2,318,239 | 2,071,480 | 1,916,493 | 1,652,366 | 1,461,232 | 1,411,054 | 1,387,570 | 1,234,987 | 1,095,113 | 971,921 | 78.6% | 168.6% |
| Zeebrugge | 2,020,723 | 1,653,493 | 1,407,933 | 1,196,755 | 1,012,674 | 958,942 | 875,926 | 965,345 | 850,164 | 776,357 | 648,153 | 110.7% | 211.8% |
| Ambarli (Turkey) | 1,940,000 | 1,446,269 | 1,186,051 | 1,078,315 | 772,873 | 571,623 | 368,223 | 342,378 | | | | 239.4% | - |
| Southampton | 1,900,000 | 1,500,306 | 1,375,000 | 1,441,012 | 1,377,775 | 1,275,322 | 1,163,722 | 1,062,535 | 921,242 | 846,057 | 891,401 | 49.0% | 113.1% |
| Marsaxlokk (Malta) | 1,900,000 | 1,485,000 | 1,321,000 | 1,461,174 | 1,300,000 | 1,244,232 | 1,165,070 | 1,033,052 | 1,044,972 | 1,071,669 | 662,648 | 52.7% | 186.7% |
| Genova | 1,855,026 | 1,657,113 | 1,624,964 | 1,628,594 | 1,605,946 | 1,531,254 | 1,526,526 | 1,500,632 | 1,233,817 | 1,265,593 | 1,179,954 | 21.1% | 57.2% |
| St. Petersburg | 1,697,720 | 1,449,958 | 1,121,111 | 776,576 | 639,474 | 580,639 | 481,509 | 289,730 | 223,942 | 195,292 | 234,355 | 192.4% | 624.4% |
| Las Palmas | 1,449,773 | 1,438,409 | 1,303,356 | 1,215,277 | 1,003,969 | 759,817 | 671,645 | 621,104 | 635,887 | 490,577 | - | 90.8% | 195.5% |
| Constantza | 1,411,370 | 1,037,077 | 768,099 | 386,282 | 206,449 | 136,272 | 118,645 | 105,981 | 85,314 | 98,260 | 86,174 | 935.7% | 1537.8% |
| Piräus | 1,373,138 | 1,403,408 | 1,394,512 | 1,541,563 | 1,605,135 | 1,404,939 | 1,165,797 | 1,161,099 | 964,902 | 933,096 | 683,969 | -2.3% | 100.8% |
| La Spezia | 1,187,040 | 1,136,664 | 1,024,455 | 1,040,438 | 1,006,641 | 975,005 | 974,646 | 909,962 | 843,233 | 731,882 | 615,604 | 21.7% | 92.8% |
| Marseille | 1,002,879 | 941,398 | 905,687 | 916,277 | 832,986 | 808,915 | 742,020 | 722,445 | 663,984 | 660,232 | 621,580 | 24.0% | 61.3% |
| Aarhus | 921,000 | 856,000 | 803,000 | | | | | 622,000 | | | | - | - |
| Izmir | 892,000 | 847,926 | 784,377 | 804,565 | 670,248 | 573,211 | 484,000 | 470,000 | 435,962 | 399,755 | 388,172 | 55.6% | 129.8% |
| London/Tilbury | 783,000 | 762,388 | 735,170 | 656,783 | 579,216 | 528,406 | 481,502 | 478,128 | 514,989 | 478,364 | 439,898 | 48.2% | 78.0% |
| Göteborg | 840,550 | 820,000 | 787,705 | 736,000 | 666,000 | 644,000 | 600,000 | 610,000 | 624,000 | 519,642 | 530,529 | 30.5% | 58.4% |
| Taranto | 755,934 | 892,203 | 716,856 | 763,318 | 658,426 | 471,570 | 186,427 | - | - | - | - | 60.3% | - |
| Livorno | 745,557 | 657,592 | 658,506 | 638,586 | 592,778 | 546,882 | 531,486 | 519,169 | 478,643 | 535,515 | 501,146 | 36.3% | 48.8% |
| Thamesport | - | 702,000 | 582,000 | 565,000 | 518,000 | 505,000 | 513,000 | 504,000 | 553,680 | 503,345 | 395,494 | 39.0% | 77.5% |
| Liverpool | 695,000 | 630,000 | 626,000 | 616,000 | 578,000 | 535,000 | 524,000 | 540,000 | 515,000 | 487,000 | 460,000 | 29.9% | 37.0% |
| Mersin | - | 643,749 | 596,289 | 532,507 | 466,262 | 365,790 | 305,860 | 293,890 | | | | 76.0% | - |
| Gdynia | 614,373 | 461,170 | 400,165 | 372,762 | 304,745 | 247,907 | 217,024 | 188,272 | 190,608 | 213,366 | 177,280 | 147.8% | 246.6% |
| Kotka | 571,000 | 461,874 | 386,552 | 325,730 | 268,592 | 243,803 | 201,004 | 192,102 | 134,028 | 161,913 | 192,346 | 134.2% | 196.9% |
| Lisboa | 554,774 | 512,501 | 513,061 | 514,769 | 554,405 | 487,529 | 438,245 | 388,733 | 364,518 | 340,786 | 333,028 | 13.8% | 66.6% |

| Port | Seaborne container throughput (in TEU) | | | | | | | | | | | Percentage change | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | 2007/2002 | 2007/1997 |
| Bilbao | 554,557 | 523,114 | 503,817 | 468,958 | 448,572 | 455,020 | 454,389 | 434,148 | 377,031 | 368,072 | 340,059 | 21.9% | 63.1% |
| Cagliari | 547,336 | 687,657 | 639,049 | 501,194 | | | | | | | | - | - |
| Illichivsk | 532,700 | 324,036 | 228,043 | 196,652 | 151,738 | 103,369 | 78,000 | | | | | 415.3% | - |
| Odessa | 523,610 | 396,433 | 288,349 | 201,428 | 15,870 | 111,175 | 75,606 | 69,487 | 49,780 | 47,321 | 51,520 | 371.0% | 916.3% |
| Napoli | 460,812 | 444,982 | 373,706 | 347,537 | 433,303 | 446,162 | 430,097 | 396,562 | 333,638 | 320,000 | 299,144 | 3.3% | 54.0% |
| Thessaloniki | 447,211 | 343,727 | 365,925 | 336,096 | 269,552 | 240,439 | 233,904 | 229,745 | 216,911 | 182,102 | 167,706 | 86.0% | 166.7% |
| Leixoes | 433,437 | 378,387 | 352,002 | 349,495 | 320,433 | 304,355 | 296,616 | 281,258 | 251,401 | 243,158 | 216,406 | 42.4% | 100.3% |
| Helsinki | 431,000 | 417,000 | 460,000 | 414,000 | 396,300 | 385,538 | 356,639 | 308,596 | 266,997 | 277,748 | 330,313 | 11.8% | 30.5% |
| Haydarpasa | - | 400,000 | 340,629 | 318,888 | 247,219 | 224,642 | 225,000 | 299,000 | | | | 78.1% | - |
| Amsterdam | 386,236 | 305,995 | 65,844 | 51,904 | 44,511 | 44,966 | 47,801 | 52,829 | 46,222 | 35,175 | 64,234 | 759.0% | 501.3% |
| Salerno | 385,306 | 359,707 | 418,205 | 411,615 | 417,477 | 374,868 | 321,304 | | | | | 2.8% | - |
| Novorossiysk | 342,183 | 226,500 | 161,800 | 102,000 | | | | | | | | - | - |
| Venezia | 329,512 | 316,641 | 289,860 | 290,898 | 283,667 | 262,337 | 246,196 | 218,023 | 199,803 | 206,389 | 211,969 | 25.6% | 55.5% |
| Klaipeda | 321,432 | 231,548 | 214,307 | 174,241 | 118,366 | 71,589 | 51,135 | 39,955 | 28,668 | 32,328 | 36,736 | 349.0% | 775.0% |
| Koper | 305,648 | 218,970 | 179,745 | 153,347 | 125,240 | 114,000 | 93,187 | 85,742 | 78,204 | 72,826 | 66,869 | 168.1% | 357.1% |
| Trieste | 265,863 | 220,310 | 198,319 | 174,729 | 118,142 | 185,301 | 200,623 | 206,134 | 189,311 | 174,080 | 204,318 | 43.5% | 30.1% |
| Kaliningrad | 252,146 | 151,047 | 112,528 | 72,094 | 44,687 | 27,821 | | | | | | 806.3% | - |
| Helsingborg | 226,733 | 200,000 | 169,000 | 99,115 | 86,109 | 84,948 | 85,593 | 97,261 | 73,263 | 65,700 | | 166.9% | 245.1% |
| Riga | 211,840 | 176,826 | 168,978 | 152,729 | 145,665 | 127,459 | | | | | | 66.2% | - |
| Lübeck | 205,338 | 234,000 | 170,000 | 137,200 | 106,700 | 78,000 | 72,000 | 82,330 | 64,838 | 91,135 | 110,477 | 163.3% | 85.9% |
| Dunkerque | 197,811 | 204,835 | 204,562 | 200,399 | 161,856 | 160,816 | 150,592 | 66,500 | | | | 23.0% | - |
| Oslo | 196,252 | 172,065 | 170,506 | 177,019 | 162,385 | 145,770 | 140,060 | 138,556 | | | | 34.6% | - |
| Hamina | 195,292 | 166,983 | 155,475 | | | | | | | | | - | - |
| Ravenna | 194,000 | | | | | | | | | | | - | - |
| Tallin | 180,911 | 152,399 | 127,585 | 113,081 | 99,629 | 87,912 | 78,072 | 76,692 | 65,246 | | | - | - |
| København/Malmö | 192,000 | 175,000 | 155,000 | 144,000 | 135,000 | 129,000 | 126,000 | 142,000 | 130,000 | 171,000 | 160,100 | 48.8% | 19.9% |
| Rauma | 174,531 | 168,952 | 120,234 | 115,821 | 109,858 | | | | | | | - | - |
| Rouen | 158,572 | 165,179 | 161,000 | | | | | | | | | - | - |
| Ancona | 106,604 | 97,035 | 85,441 | 65,077 | 75,841 | 94,315 | 90,030 | 83,934 | 71,270 | | | 13.0% | - |
| Varna | 99,713 | 94,046 | 84,000 | | | | | | | | | - | - |
| Gdansk | 96,873 | 78,364 | 70,014 | | | | | | | | | - | - |
| Szczecin/Sw. | 56,276 | 42,431 | 36,453 | 27,680 | 21,628 | 19,367 | 19,960 | 21,865 | 12,420 | 7,949 | | 190.6% | 608.0% |

**Figure 22: Container ports in Europe: market share of intermodal container hinterland traffic between 2005 and 2007**

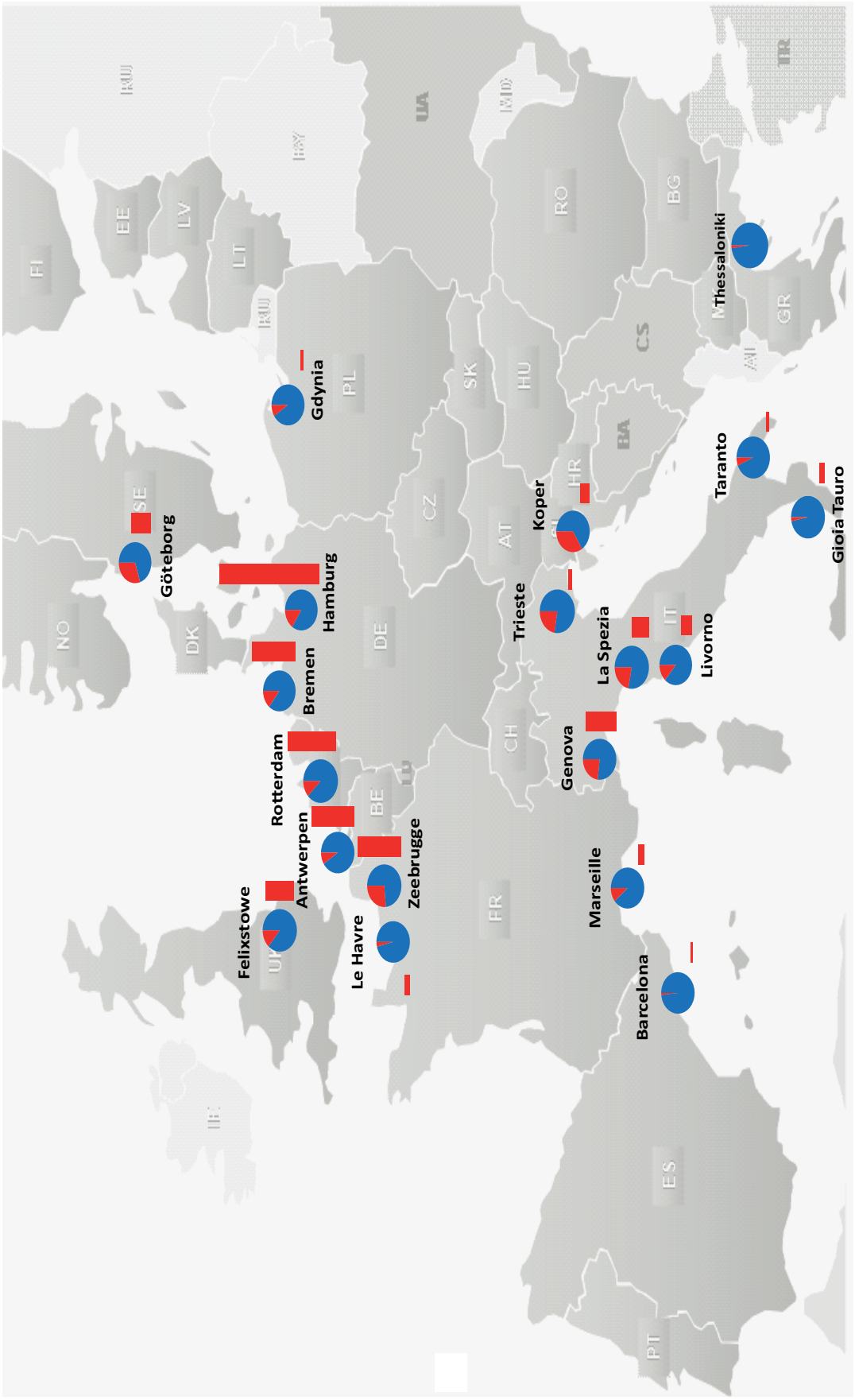
*Source: KombiConsult analysis*

| Port | Seaborne container throughput (TEU) | | | Container volume carried by rail (TEU) | | | Rail percentage of seaborne throughput | | | Rail percentage of hinterland traffic | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2007 | 2006 | 2005 | 2007 | 2006 | 2005 | 2007 | 2006 | 2005 | 2007 | 2006 | 2005 |
| Rotterdam | 10.790.604 | 9.653.232 | 9.288.399 | 891.420 | 801.900 | 632.832 | 13,7% | 13,7% | 11,2% | 11,1% | 10,9% | 9,4% |
| Hamburg | 9.889.792 | 8.861.804 | 8.087.545 | 1.830.000 | 1.600.000 | 1.425.000 | 18,5% | 18,1% | 17,6% | 32,5% | 31,7% | 30,9% |
| Antwerpen | 8.176.614 | 7.018.799 | 6.482.029 | - | 700.000 | 540.000 | - | 10,0% | 8,3% | 9,0% | 9,0% | 10,2% |
| Bremen/Bremerhaven | 4.892.087 | 4.444.389 | 3.743.969 | 812.391 | 688.436 | 530.921 | 16,6% | 15,5% | 14,2% | 42,9% | 41,3% | 37,3% |
| Gioia Tauro | 3.445.337 | 2.938.176 | 3.160.981 | - | 93.406 | 74.071 | - | 3,2% | 2,3% | - | 57,6% | 54,5% |
| Felixstowe | 3.300.000 | 3.080.000 | 2.760.000 | 520.000 | 515.000 | 475.000 | 15,8% | 16,7% | 17,2% | 23,9% | 25,3% | 26,1% |
| Algeciras | 3.152.325 | 3.256.614 | 3.179.300 | - | - | 12.766 | - | - | 0,4% | - | - | - |
| Le Havre | 2.638.000 | 2.137.828 | 2.118.509 | 98.000 | 70.006 | 82.000 | 3,7% | 3,3% | 3,9% | 5,2% | 4,4% | 5,8% |
| Barcelona | 2.610.099 | 2.318.239 | 2.071.480 | 41.800 | 100.000 | - | 1,6% | - | - | 2,6% | - | - |
| Zeebrugge (1) | 2.020.723 | 1.653.493 | 1.407.933 | *7,3* | *5,8* | *4,9* | 35,9% | 32,2% | 31,4% | 44,7% | 37,8% | 36,6% |
| Genova | 1.855.026 | 1.657.113 | 1.624.964 | 558.000 | - | 390.000 | 30,1% | - | 24,0% | 33,4% | - | 26,7% |
| La Spezia | 1.187.040 | 1.136.664 | 1.024.455 | - | 315.340 | 262.139 | - | 27,7% | 25,6% | 32,0% | 32,0% | 30,0% |
| Marseille | 1.002.879 | 941.398 | 905.687 | - | 114.000 | 110.418 | - | 12,1% | 12,2% | - | 12,2% | 12,2% |
| Göteborg | 840.550 | 820.000 | 787.705 | 345.000 | | | 41,0% | - | - | - | - | - |
| Taranto | 755.934 | 892.203 | 716.856 | - | - | 49.000 | - | - | 6,8% | | | |
| Gdynia | 614.373 | 461.170 | 400.165 | - | 46.117 | 40.017 | - | 10,0% | 10,0% | - | - | - |
| Koper | 305.648 | 218.970 | 179.745 | 158.000 | - | - | 51,7% | - | - | - | - | - |
| Trieste | 265.863 | 220.310 | 198.319 | - | - | 57.000 | - | - | 28,7% | - | - | - |

*(1) Rail volume in million tonnes*

**Figure 23: Container ports in Europe: intermodal container hinterland traffic's share in seaborne throughput in 2007**

*(Source: KombiConsult analysis)*



# 3 Accompanied intermodal rail/road traffic in 2007

## 3.1 Market size

We tracked down the following eight companies which provided accompanied intermodal services in Europe in 2007:

- Adria Kombi
- Alpe Adria
- Autoroute Ferroviaire Alpine
- Crokombi
- Hungarokombi
- Hupac
- Ökombi
- RAlpin

With the exception of Autoroute Ferroviaire Alpine (AFA) all other companies were operating “conventional” accompanied services, also known as “rolling motorways”. They use shuttle sets of short-coupled low-bed wagons. Lorry drivers steer their vehicles onto one end of the train at the departure terminal, and at the destination they leave the train from the other end. In contrast, AFA was the first operator to use Modalohr technology, which includes a horizontal side-loading system for entire road vehicles and unaccompanied semi-trailers. Each vehicle has to be separately loaded on or unloaded from the specially designed wagons, which have mobile platforms for this purpose.

In 2007, around 75 percent of all shipments transported on accompanied services were shipped by Ökombi and RAlpin. These service providers also represented a new business model applied to this intermodal market segment, a model which had made its breakthrough in the previous three to four years. Whereas rolling highway services used to be provided by intermodal operators primarily operating in the unaccompanied traffic sector, who considered accompanied transport as a complementary, or at best equivalent line of business, Ökombi and RAlpin were entirely dedicated to the carriage of road vehicles in accompanied rail/road transportation. After its restructuring, Hungarokombi now belonged to this category as well, while all other operators were offering the entire range of intermodal services.

## 3.2 Traffic volume

In 2007, the intermodal operators of European accompanied traffic transported approximately 410,000 road vehicles (shipments). With an average ratio of 2.33 TEU per truck the total volume amounted to around 955,000 TEU (see ***Figure 24***). The fact that domestic traffic increased its share to 31 percent was remarkable. It was largely due to the outstanding performance of Ökombi's short-distance Wörgl-Brennersee service, which saw its traffic increase to around 115,000 vehicles. In fact, this service was ranked first among all rolling motorways in 2007.

In terms of tonnage transported the proportion of domestic traffic was even slightly higher (34%) than in terms of shipments. The volume totalled around 13.6 million gross tonnes (see ***Figure 24***). On average the road vehicles transported by rail weighed 36 tonnes in domestic and 32 tonnes in international accompanied services.

**Figure 24: Accompanied intermodal rail/road traffic by market segment in 2007**

| Market segment | Gross tonnes | Shipments (n° of trucks) | TEU |
|---|---|---|---|
| Domestic services | 4,592,000 | 127,628 | 297,373 |
| International services | 9,018,000 | 282,255 | 657,654 |
| Total services | 13,610,000 | 409,883 | 955,027 |

*Source: Intermodal service providers, UIRR, AFA website, KombiConsult calculations*

Regarding the volume of shipments, accompanied intermodal traffic in Europe peaked in the late 1990s and at the beginning of this century. The 2002 survey commissioned by UIC as part of the *Capacity Study (2004)* recorded almost 550,000 road vehicles transported on domestic and cross-border services. This was quite probably the all-time high of rolling motorway traffic.

A comprehensive survey was not carried out for 2003. According to UIRR statistics its members, who constituted by far the largest share of this market segment, suffered a slight reduction of volume. The decline of accompanied traffic was even more pronounced in

2004 and reached its lowest point to date in 2005, when a volume of 323,050 shipments was recorded (see also ***Figure 25***).

Accompanied traffic then recovered considerably. From 2005 to 2007, it grew by 27 percent (in vehicles) and 33 percent (in tonnage). With the 2002 results considered as 100, in 2007 the index was at 93 in terms of tonnage, and at 75 regarding the number of road vehicles conveyed. Interestingly however, virtually the entire increase from 2005 to 2007 was generated by domestic services, whereas the international volume remained constant (278,505 shipments in 2005)

**Figure 25: Accompanied intermodal rail/road traffic: tonnage transported in 2002, 2005 and 2007**

| | Mill tonnes | Index | Trucks | Index |
|---|---|---|---|---|
| 2002 | 14.6 | 100 | 546,850 | 100 |
| 2005 | 10.2 | 70 | 323,050 | 59 |
| 2007 | 13.6 | 93 | 409,883 | 75 |

*Source: UIC: Capacity Study (2004); UIC: Report on CT in Europe 2005 (2006); KombiConsult analysis*

Virtually all accompanied traffic in Europe took place on trade lanes involving Austria and Switzerland. This highlighted the unique transport policies in these countries, which favour this kind of transport technology – albeit in addition to promoting unaccompanied intermodal transport, it must be added.

In 2007, the largest volume of road vehicles was transported on Ökombi's domestic service between Wörgl and the Brenner pass (see ***Figure 26*** overleaf). The most important international market was the transit corridor through Switzerland, connecting terminals in southern Germany and northern Italy. On this route RAlpin and Hupac transported around 90,000 trucks in 2007. Over 70,000 road vehicles used rolling highway trains operated by Alpe Adria or Ökombi between Austria and Italy. Adria Kombi, Hungraokombi and Ökombi also achieved high volumes on services between Austrian stations and Hungary and Slovenia.

In 2007, under five percent of all accompanied intermodal shipments were transported on services not affecting Austria or Switzerland. The largest of these was AFA's Aiton-Orbassano service, operating on the transalpine Modane corridor between France and Italy. The intermodal operator reported that it had shipped 17,400 vehicles in 2005 and 19,000 trucks in 2006. No precise data was available for 2007. We estimated that volume would not have increased to over 20,000 shipments, owing to infrastructure constraints on the route.

**Figure 26: Accompanied intermodal rail/road traffic by market segment and corridor: road vehicles transported in 2007**

| Market segment /corridor | | | Shipments (n° of trucks) |
|---|---|---|---|
| Domestic | Austria | | 115,776 |
| | Switzerland | | 11,852 |
| Subtotal domestic | | | 127,628 |
| International | Austria | - Germany | 5,085 |
| | | - Hungary | 33,373 |
| | | - Italy | 72,006 |
| | | - Slovenia | 53,869 |
| | Croatia | - Slovenia | 27 |
| | France | - Italy | 20,000 |
| | Germany | - Italy | 97,776 |
| | | - Switzerland | 121 |
| Subtotal international | | | 282,257 |
| Total accompanied services | | | 409,885 |

*Source: Intermodal service providers, UIRR, AFA website, KombiConsult calculations*

# 4 Total intermodal rail/road traffic in 2007

## 4.1 Traffic volume in 2007

In 2007, European intermodal service providers achieved a consolidated volume in unaccompanied and accompanied traffic of 185.8 million gross tonnes and 18.1 million TEU. Compared to 2005, the market share of unaccompanied services had risen slightly to reach 92.7 percent (in tonnes) and 94.7 percent (in TEU). The domestic intermodal business exceeded the 100 million tonne mark for the first time. In this segment, the share of accompanied services was significantly smaller than in cross-border traffic, where they represented around 10 percent of the market (see ***Figures 27-28***).

**Figure 27: Total intermodal rail/road traffic: goods transported in 2007, by mode**

| Intermodal market segment | Gross tonnes | | |
|---|---|---|---|
| | Unaccompanied traffic | Accompanied traffic | Total intermodal traffic |
| Domestic services | 97,192,045 | 4,592,000 | 101,784,045 |
| International services | 74,968,963 | 9,018,000 | 83,986,963 |
| Total intermodal services | 172,161,008 | 13,610,000 | 185,771,008 |

**Figure 28: Total intermodal rail/road traffic: TEU carried in 2007, by mode**

| Intermodal market segment | TEU | | |
|---|---|---|---|
| | Unaccompanied traffic | Accompanied traffic | Total intermodal traffic |
| Domestic services | 9,893,566 | 297,373 | 10,190,939 |
| International services | 7,219,254 | 657,654 | 7,876,908 |
| Total intermodal services | 17,112,820 | 955,027 | 18,067,847 |

## 4.2 Traffic volume between 2005 and 2007

In 2007, we recorded a 37 percent increase in total intermodal traffic since 2005 in terms of tonnage transported, and a 34.6 percent increase in terms of TEU (see ***Figures 29-30***). Even if we deducted the volume recorded in 2007 for the intermodal service providers that had not been identified during the pioneering 2005 survey, the increase in total traffic would amount to around 29 percent. For the European intermodal rail/road industry this would amount to an average annual growth rate of around 13.5 percent from 2005 to 2007.

**Figure 29: Total intermodal rail/road traffic: goods transported between 2005 and 2007**

| Intermodal market segment | Traffic volume (million gross tonnes) | | 2007/2005 % change |
|---|---|---|---|
| | 2005 | 2007 | |
| Domestic services | 73.28 | 101.78 | 38.9% |
| International services | 62.27 | 83.99 | 34.9% |
| Total services | 135.55 | 185.77 | 37.0% |

*Source: UIC: Report on CT in Europe 2005 (2006); KombiConsult analysis*

**Figure 30: Total intermodal rail/road traffic: TEU carried between 2005 and 2007**

| Intermodal market segment | Traffic volume (million TEU) | | 2007/2005 % change |
|---|---|---|---|
| | 2005 | 2007 | |
| Domestic services | 7.39 | 10.19 | 37.9% |
| International services | 6.03 | 7.88 | 30.7% |
| Total services | 13.42 | 18.07 | 34.6% |

*Source: UIC: Report on CT in Europe 2005 (2006); KombiConsult analysis*

## 4.3 Impact of intermodal traffic on rail infrastructure

The 2007 survey provided additional evidence that intermodal rail/road traffic was one of, if not the fastest growing sector in rail freight services. The increase of over 30 percent within the two year period exceeded the average growth of total European rail cargo traffic considerably.

Although intermodal service providers were likely to be successful in achieving productivity gains and enhancing the capacity load factor of intermodal block train services, increasing volumes required more capacity in train paths and rail networks. On the basis of our survey we estimated that in 2007 over 330,000 intermodal trains ran in unaccompanied and accompanied traffic (see ***Figure 31***). This represented nearly 70,000 trains more than in 2005, an increase of 25 percent. With an average frequency of 250 annual departures (both ways) of intermodal block train services – ranging from 220 to 270 departures – the daily average in 2007 was of 1,330 intermodal trains utilising the European rail network.

**Figure 31: Intermodal trains by market segment in 2007**

| Intermodal market segment | Intermodal trains 2007 | | | |
|---|---|---|---|---|
| | Reported figures | Adjusted figures | Estimated additional | Total |
| Unaccompanied traffic | 413,208 | 292,370 | 15,000 | 307,370 |
| Domestic services | | 156,020 | 15,000 | 171,020 |
| International services | | 136,350 | | 136,350 |
| Accompanied traffic | 24,165 | 24,165 | 1,500 | 25,665 |
| Total intermodal traffic | 437,373 | 316,535 | 16,500 | 333,035 |

*Source: KombiConsult analysis*

**How were these figures determined?**

(1) For unaccompanied traffic, intermodal companies – operators and railway undertakings – reported a total of 413,208 trains. Since cross-border intermodal services in particular continued to a great extent to be produced and also marketed by two or even more traction service providers and intermodal operators, we were faced with an uncertain number of double-countings. In order to resolve this issue we analysed who was co-operating with whom on what service corridor, both at operator and at traction level. In this respect we were very grateful to many European railway undertakings for providing us with comprehensive data sets that were essential in overcoming this challenge. In addition, these data sets enabled us to determine the number of trains in services for which intermodal companies did not provide statistics.

After this complex and arduous task we reduced the total number of intermodal journeys by around 120,000, to 292,370 trains, and were able to classify them fairly reliably as either domestic or international services. This is what we call “adjusted figures” in ***Figure 31.*** Nevertheless, we were unable to cover or establish clear figures for the traffic of several intermodal service providers that had not provided relevant data. On the basis of information on their transport volume, and using our market expertise regarding the range and number of services they provided we estimated the number of trains. This estimate is given in ***Figure 31*** in the column entitled “estimated additional”.

(2) The task was considerably easier for accompanied intermodal traffic since this report could draw upon excellent data sets provided by railway undertakings and intermodal operators carrying out the underlying rolling highway services. We only lacked data for the Aiton-Orbassano service. On the basis of website information on the service schedule we estimated that it ran around 1,500 times in 2007.

## 4.4 Revenue from intermodal rail/road services

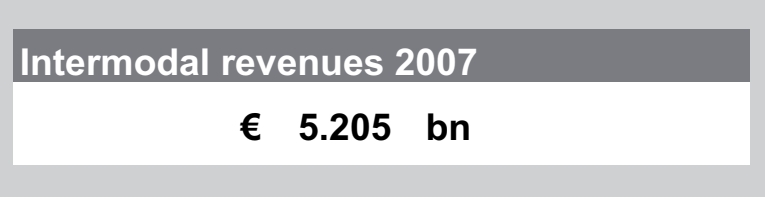
We obtained data from 55 intermodal service providers on revenue generated from intermodal operations. The result was a total of € 4.46bn. In order to avoid double-countings as much as possible we deducted all revenue reported by railway undertakings primarily supplying rail traction services to intermodal operators. For the turnover of intermodal operators, we usually included the cost of traction as well as other services provided, such as infrastructure access charges, wagons and terminal handling.

However, it has to be stressed that several intermodal operators only indicated the revenue from rail transport, excluding transhipments. We accepted that this deduction could be excessive, as most of the railways operated and sold intermodal services of their own. Nevertheless, we took account of all revenue generated by railway undertakings providing integrated intermodal services, or by undertakings whose revenue was not part of the revenue recorded by other companies.

On this basis intermodal revenue amounted to € 3.305bn. The intermodal companies included represented 65.5 percent of the entire European intermodal traffic, of 17.1 million TEU in 2007. Our next step was to use a linear revenue to traffic ratio in order to deduce the revenue of all intermodal service providers, and came to a total of around € 5.05bn revenue for the European intermodal industry in 2007.

In order to validate this result we carried out a second analysis. We calculated an average income per TEU based on the € 3.3bn revenue described above. This resulted in an average of € 304 per TEU shipped. Based on the assumption that what is valid for almost two thirds of European combined transport is valid for all European combined transport we applied the average value of € 304 per TEU to the 17.1 million TEU intermodal volume in Europe. This resulted in total intermodal revenue of over € 5.2bn (see ***Figure 32***). Considering that several intermodal companies only reported their transport-related turnover, as mentioned above, this figure was by no means an overestimation of the European intermodal industry's revenue in 2007.

**Figure 32: Revenue from intermodal rail/road services in 2007**




*Source: KombiConsult analysis*

## 4.5 Employment in unaccompanied intermodal rail/road traffic

In order to analyse the number of employees involved in intermodal rail/road services we took an approach similar to the one taken for intermodal revenue. We investigated the range of employment at intermodal service provider level (direct employment), train operating company level and infrastructure manager level in the following way:

**(1) Staff directly involved in intermodal services**

The 49 intermodal service providers featured in the 2007 survey reported a workforce of 6,143 people at the end of 2007. Together they transported approximately 68 percent of all European intermodal traffic, 17.1 million TEU. Using a linear traffic to employment ratio the total direct employment in European intermodal companies amounted to over 9,000 people in 2007 (see ***Figure 34***).

**(2) Train operating company staff**

Most of the companies operating trains (railway undertakings) featured in the 2007 survey declared that they did not have staff specifically dedicated to intermodal services, yet some did to quite an extent. In order to have a common denominator for determining the number of railway undertaking staff involved in intermodal transport we took an inductive approach.

We started by estimating the number of staff required to ensure the running of intermodal service, with a distinction between domestic and international traffic (see ***Figure 33***). We assumed that an average of 1.5 locomotive drivers, taking into account the typical shift periods, were needed to operate a daily domestic block train service, which had an average journey of around 500 kilometres. In addition, an estimated average workforce of 1.5 people per block train was required for operational tasks such as wagon master, shunting services, or wagon management. At last, we assumed that 1 person was needed in overhead departments. The result was an average total of 4 people involved in the daily running of a domestic block train. Multiplied by the number of daily domestic block trains, this amounted to a minimum of over 2,700 people employed by companies operating trains that could be considered as working in domestic intermodal services, but not at the level of direct employment.

The same approach was adopted for international services. In this case we assumed that the average distance was around 900 kilometres. In total we estimated that over 7,200 employees in railway undertakings were either specifically dedicated to, or at least involved in intermodal services (see ***Figure 34***).

**(3) Infrastructure manager staff**

The number of infrastructure manager staff involved in intermodal transport was obviously much more difficult to determine precisely, since their predominant scope of work was general, exceptions being staff involved in building and managing intermodal terminals for example, employees dealing with intermodal train schedules in product management divisions and other similar roles. Because of a lack of data on job allocation in the infrastructure manager workforce we took a pragmatic approach. On the basis of RNE data we found that European rail networks employed at least 312,000 people in 2007. If 5 percent of them were entirely assigned to intermodal transport, this industry would total 15,600 staff (see ***Figure 34***).

According to these estimates intermodal rail/road services were the source of nearly 32,000 jobs in 2007 (see ***Figure 34***).

**Figure 33: Estimated employment in intermodal traffic for rail operating companies**

| Intermodal market segment | Average number of employees per block train service | | | |
|---|---|---|---|---|
| | Loco drivers | Operational staff | Overhead staff | Total |
| Domestic traffic | 1.5 | 1.5 | 1.0 | 4.0 |
| International traffic | 3.5 | 2.0 | 1.5 | 7.0 |

*Source: KombiConsult analysis*

**Figure 34: Employment in unaccompanied intermodal rail/road traffic in 2007**

| Staff with | Number of employees | | |
|---|---|---|---|
| | Reported figures | Estimated additional | Total |
| Intermodal service providers | 6,143 | 2,891 | 9,034 |
| Train operating companies | 660 | 6,554 | 7,214 |
| Infrastructure managers | - | 15,634 | 15,634 |
| Total | 6,803 | 25,079 | 31,882 |

*Source: KombiConsult analysis*

# 5 Outlook for unaccompanied intermodal traffic in 2008/2009

The 2007 survey included a section of questions on intermodal service providers' expectations regarding the potential development of their line of business in 2008 and 2009. Depending on the questions, up to 55 companies responded, which amounted to over 50 percent of the 105 providers identified. The results are described in the following sections.

## 5.1 Expectations of intermodal service providers for 2008

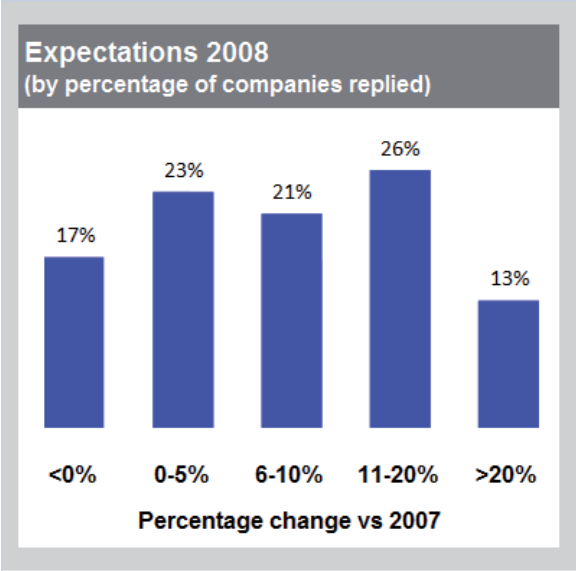
The intermodal companies that revealed their forecast for unaccompanied traffic in 2008 accounted for 63 percent of the total volume in 2007. Approximately 83 percent of these companies expected an increase in shipments in 2008 (see ***Figure 35***). 54 percent predicted a 1 to 10 percent increase on their current number of TEU. 39 percent of operators predicted even higher growth rates.

A large proportion of intermodal service providers, 17 percent altogether, were worried that they would record losses in volume, some of them in quite considerable amounts. This stood in stark contrast to the 2005 survey, for which no respondent had expected a decrease in volume. In our opinion, this result showed that these intermodal service providers had anticipated or even already experienced the economic slowdown and the decline of freight traffic in their own business activities. This decline hit virtually the entire intermodal industry by autumn 2008 at the latest. In this respect it should be pointed out that the survey was carried out between June and September 2008.

Our next step was to apply the intermodal service providers' predictions for 2008 to their 2007 volumes and calculate the expected evolution of their traffic volume, both in tonnes and TEU. We thus calculated the impact or contribution of each category of operators – with regard to their expected growth rates – on the development of all unaccompanied traffic in Europe (see ***Figure 36)***.

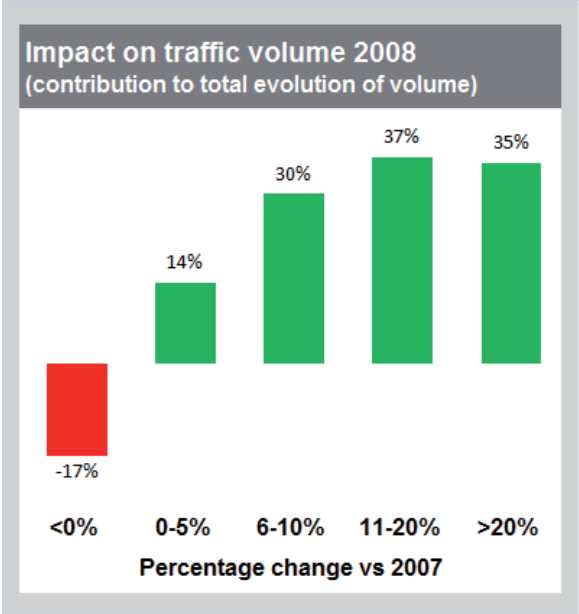
Through our analysis of these predictions we worked out an average expected growth rate of 7.6 percent for all unaccompanied intermodal traffic in 2008.

**Figure 35: Growth rates expected by intermodal service providers: 2008 against 2007**




*Source: 47 intermodal service providers*

**Figure 36: Impact of growth rates expected by intermodal service providers, weighted according to individual volumes in 2007 against total traffic volume: 2008**




*Source: 47 intermodal service providers, KombiConsult analysis*

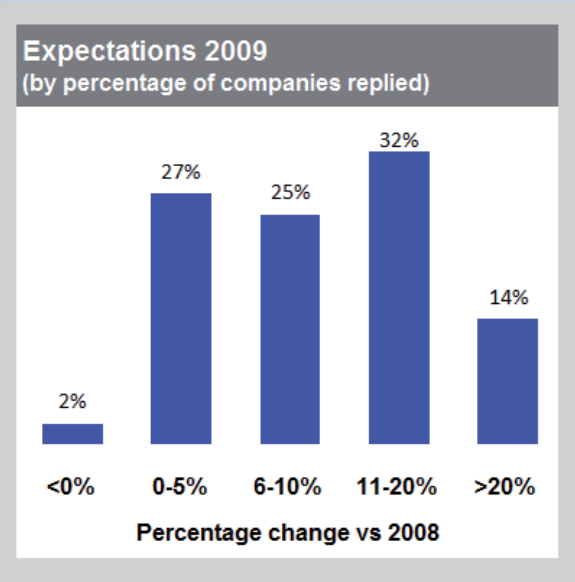
## 5.2 Expectations of intermodal service providers for 2009

Except for two companies (2%) all intermodal service providers that replied to our survey predicted growth in their traffic volume in 2009, compared to 2008 (see ***Figure 37***). This result came as a surprise, since 17 percent of the same sample expected a decrease in volume for 2008. This suggested that even the intermodal companies expecting a decline in intermodal shipments in 2008 were optimistic for the following year. Moreover, those who were optimistic for 2008 were even more so for 2009. 71 percent of all respondents expected their company's traffic volume to increase by 6 percent or more in 2009 compared to the previous year, while only 60 percent made this prediction for the 2007 to 2008 period.

As with our analysis of development expected in 2008 we applied intermodal service providers' predictions for 2009 to their expected 2008 volumes and calculated the impact or contribution of each category of operators – with regard to their expected growth rates – on the development of all unaccompanied traffic in Europe. Since a greater number of intermodal companies predicted higher growth rates for 2009 than for 2008, and since many of them also had quite large traffic volumes, it was obvious that for operator categories with expected growth rates of over 6 percent, their contribution to the increase in total intermodal traffic would be considerably greater than in the 2008 forecast (see ***Figure 38)***.

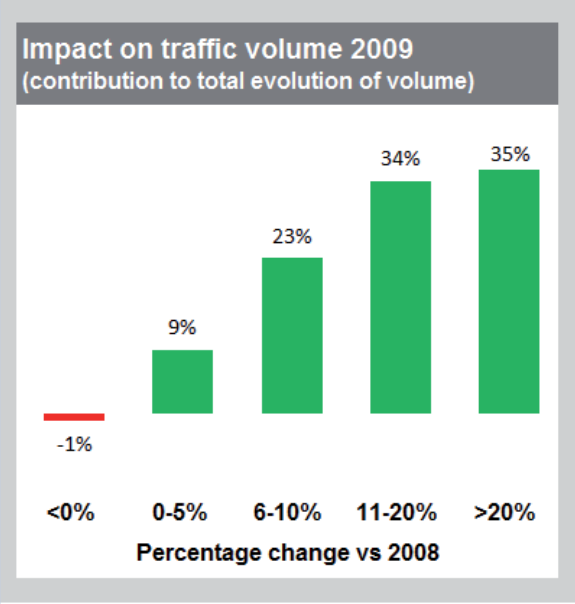
Consequently, the projected average growth rate from 2008 to 2009, amounting to 11.7 percent was also significantly higher than the 2008/2007 average.

**Figure 37: Growth rates expected by intermodal service providers: 2009 against 2008**




*Source: 45 intermodal service providers*

**Figure 38: Impact of growth rates expected by individual intermodal service providers, weighted according to their 2008 volumes against total traffic volume: 2009**

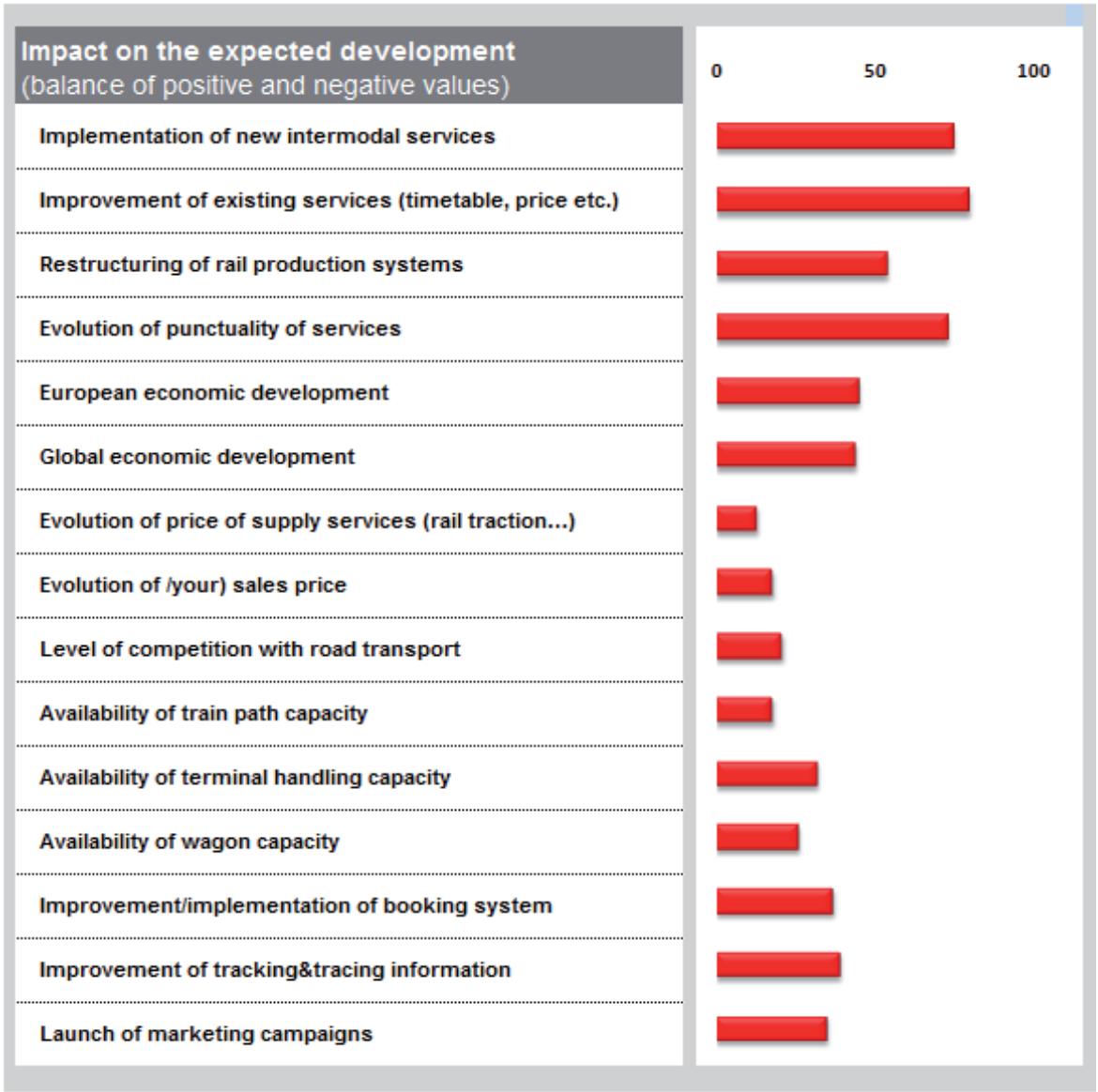



*Source: 47 intermodal service providers, KombiConsult analysis*

## 5.3 Assessment of factors likely to have an impact on intermodal evolution in 2008 and 2009

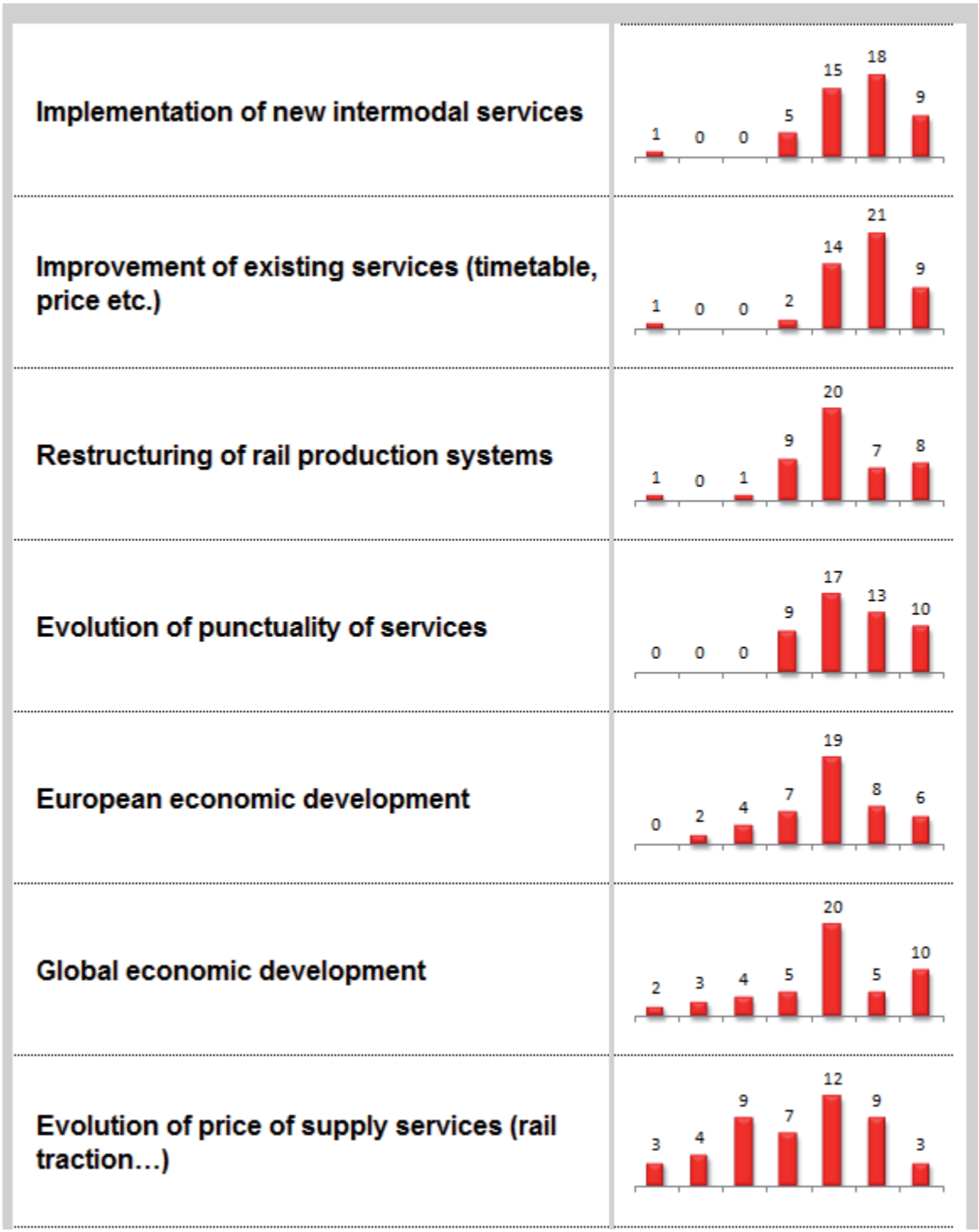
For the 2007 survey, intermodal service providers were requested to not only assess the quantitative development of their business, but also reveal which factors had a positive or negative impact on transport volume. They were asked to rate the extent of impact on a scale of '-3' to '+ 3' with '-3' very negative and '+3' very positive. ***Figure 40*** (see overleaf) shows the individual ratings and the number of entries for every factor. The consolidated result, a sum of all individual ratings, is given in ***Figure 39***.

**Figure 39: Significance of factors likely to have an impact on the evolution of intermodal traffic in 2008 and 2009**

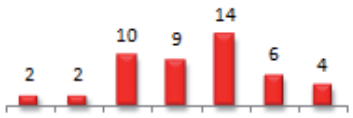
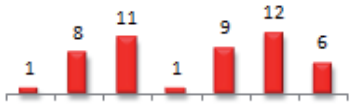
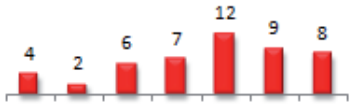
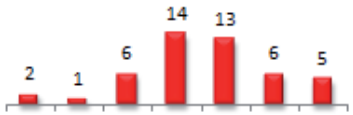
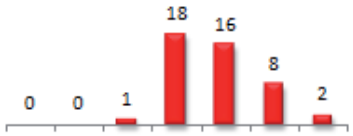
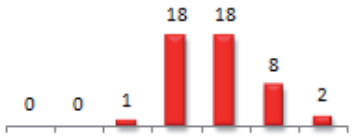
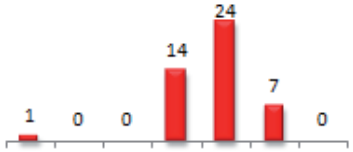



*Source: KombiConsult analysis of replies of 55 intermodal service providers*

**Figure 40: Rating of factors likely to have an impact on evolution of intermodal traffic in 2008 and 2009**




*Source: KombiConsult analysis of replies of 55 intermodal service providers*

| | |
|---|---|
| **Evolution of /your) sales price** |  |
| **Level of competition with road transport** |  |
| **Availability of train path capacity** |  |
| **Availability of terminal handling capacity** |  |
| **Availability of wagon capacity** |  |
| **Improvement/implementation of booking system** |  |
| **Improvement of tracking&tracing information** |  |
| **Launch of marketing campaigns** |  |

The analysis revealed that intermodal service providers were virtually unanimous in considering four factors particularly stimulating for growth in their intermodal volumes:

- Improvement of existing services regarding timetables, frequency or prices
- Implementation of new services
- Improvement of service punctuality
- Restructuring of rail production systems

To a great extent, intermodal companies could influence these factors through their own action or by selecting appropriate service partners, who were seen as highly influential in increasing volumes. In contrast, respondents were cautious regarding the positive impact of economic development in both the European economy and global trade. Most ratings were '+1', which was much lower than in the two previous years. We believed that this assessment already reflected the slowdown of economic activities starting in the first half of 2008 and the massive reduction of transport demand during the summer.

Intermodal service providers were most concerned with the following factors:

- Increase of purchasing prices, particularly for long-distance rail traction, shunting services and fuel.
- Increased competition with road, particularly when total transport demand would decrease and road operators would undercut market prices to prevent their vehicles from standing idle.
- Lack of train path capacity.
- Lack of available terminal handling capacity.

These factors were judged to be significant obstacles to growth in intermodal traffic, or even possible causes of a reduction in volumes, especially in 2008.

## 5.4 Predicted evolution of unaccompanied intermodal traffic in 2008 and 2009

Based on the predictions for 2008 and 2009 of up to 55 intermodal service providers, which constituted over 63 percent of all unaccompanied intermodal traffic in Europe in 2007, we were able to determine their average annual growth rates:

- 2008 against 2007: + 7.6 %
- 2009 against 2008: + 11.7 %

In order to make an estimate for all intermodal traffic, we considered these expected growth rates as valid for the entire industry. The corresponding predictions for 2008 and 2009 in terms of tonnage and TEU volume are presented in ***Figures 41-42***.

If these growth rates were achieved, the volume of European intermodal traffic in 2008 would rise to 185.5 million tonnes and 18.4 million TEU. In 2009, the industry would for the first time exceed the 200 million tonne and 20 million TEU marks.

**Figure 41: Predicted unaccompanied intermodal traffic: goods transported between 2007 and 2009 (in million gross tonnes)**

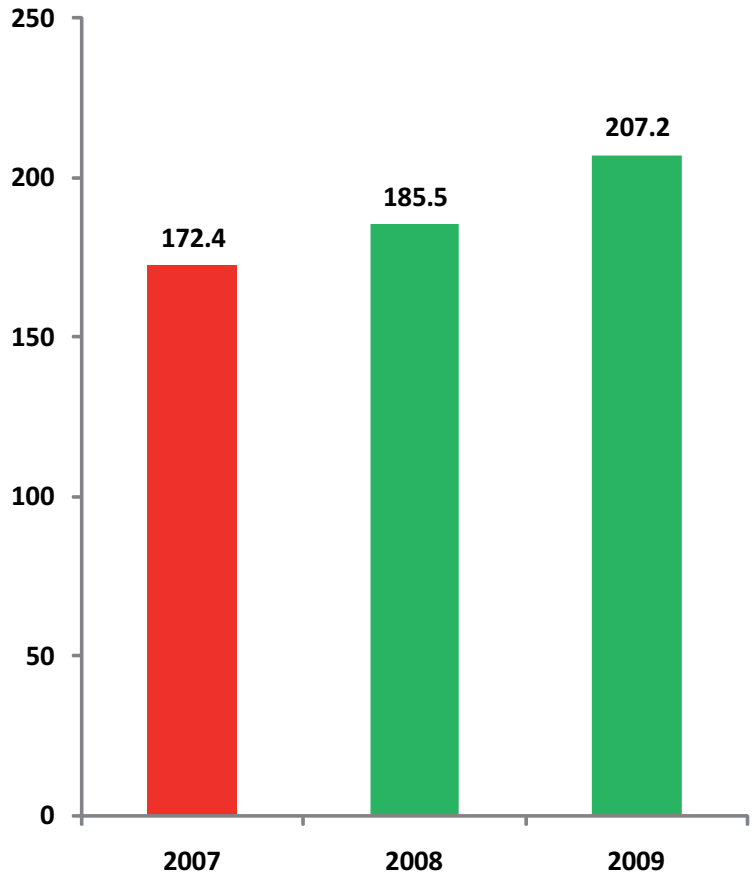
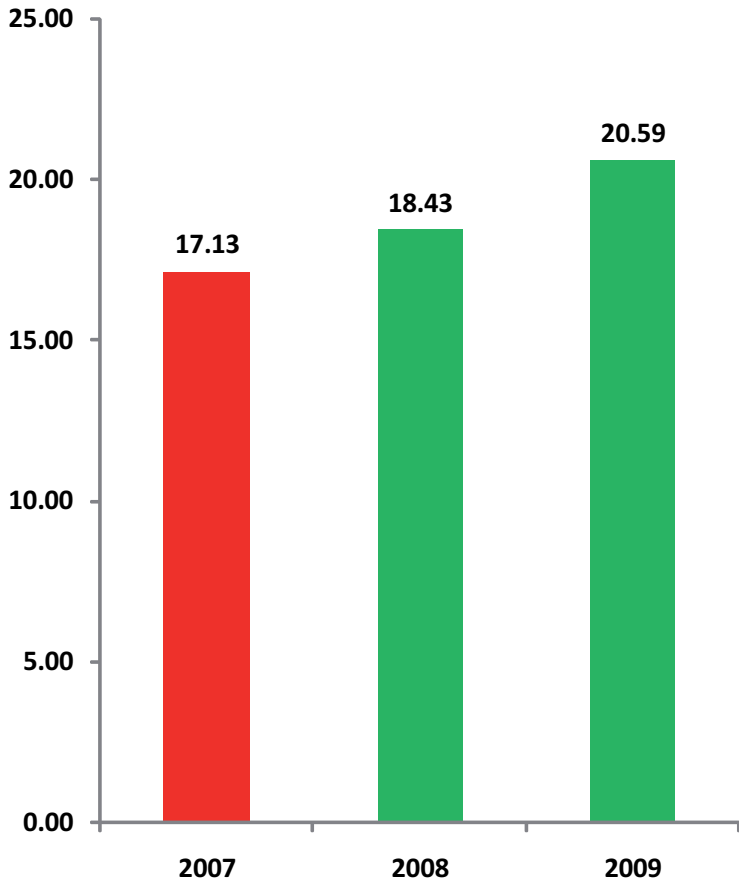


**Figure 42: Prediction for unaccompanied intermodal traffic: TEU transported between 2007 and 2009 (in million TEU)**



## Annex: Unaccompanied rail/road intermodal service providers in 2007

| Intermodal service provider | Headquartered in |
|---|---|
| ACOS Transport GmbH | Germany |
| ACTS AG | Switzerland |
| ACTS Nederland B.V. | Netherlands |
| Adria Kombi d.o.o. in drugi k.d. | Slovenia |
| Alpe Adria (Società Alpe Adria S.p.A.) | Italy |
| Ambrogio Trasporti SPA | Italy |
| Basel Multi-Terminal AG | Switzerland |
| BDZ EAD (Bulgarian Railways) | Bulgaria |
| Bohemiakombi spol.s.r.o. | Czech Republic |
| boxXpress.de GmbH | Germany |
| BTT BahnTank Transport GmbH | Germany |
| Roberto Bucci S.p.A. | Italy |
| CargoNet AB | Sweden |
| CargoNet AS | Norway |
| CARGOSPED Sp.z o.o. | Poland |
| ČD Cargo, České dráhy, a.s. | Czech Republic |
| Cemat S.p.A. | Italy |
| CFR MARFA S.A. | Romania |
| Combiberia SA | Spain |
| Contargo GmbH & Co. KG | Germany |
| CP Carga | Portugal |
| Crokombi d.o.o. | Croatia |
| CSKD Intrans s.r.o. | Czech Republic |
| DB Railion Intermodal AG | Germany |
| DHL Freight GmbH Euronet | Germany |
| Direct Rail Services Ltd | United Kingdom |
| duisport rail GmbH | Germany |
| AS Eesti Raudtee (Estonian Railways) | Estonia |
| English Welsh & Scottish Railway Ltd | United Kingdom |
| European Rail Shuttle B.V. (ERS) | Netherlands |
| Ewals Cargo Care | Belgium |
| Fastline Ltd | United Kingdom |
| First GBRf | United Kingdom |
| Freightliner Ltd | United Kingdom |

| Intermodal service provider | Headquartered in |
|---|---|
| Fremura | Italy |
| GMC Logistics Group | Italy |
| Green Cargo AB | Sweden |
| GTS S.p.A. | Italy |
| Häfen und Güterverkehr Köln AG | Germany |
| Hangartner AG | Switzerland |
| Hannibal S.p.A. | Italy |
| Hellmann Worldwide Logistics GmbH & Co. KG | Germany |
| Hungária Intermodal Kft | Germany |
| HUPAC Intermodal AG | Switzerland |
| HUPAC Intermodal B.V. | Netherlands |
| IMS Intermove Systems Speditions- und Transport GesmbH | Austria |
| Intercontainer Austria GesmbH | Austria |
| Intercontainer-Interfrigo SA | Switzerland |
| Intercontainer Scandinavia AB | Sweden |
| Inter Ferry Boats NV (IFB) | Belgium |
| Italcontainer S.p.A. | Italy |
| Kali-Transport Gesellschaft mbH | Germany |
| Kombi Dan A/S | Denmark |
| Kombiverkehr KG | Germany |
| SIA LDz Cargo Loģistika | Latvia |
| AB Lietuvos Geležinkeliai (Lithuanian Railways) | Lithuania |
| LISCONT S.A. | Portugal |
| LOCON Logistik & Consulting AG | Germany |
| Logtainer | Italy |
| Logwin AG | Germany |
| Lorry-Rail S.A. | Luxembourg |
| Mälarpendeln AB | Sweden |
| MAV Cargo | Hungary |
| Ignazio Messina & C. S.p.A. | Italy |
| Metrans a.s | Czech Republic |
| MidCargo AB | Sweden |
| NAVILAND Cargo | France |
| Norfolk Line B.V. | Netherlands |

| Intermodal service provider | Headquartered in |
|---|---|
| Novatrans S.A. | France |
| PCC Intermodal S.A. | Poland |
| Willy Petersen Spedition GmbH | Germany |
| PKP Cargo S.A. | Poland |
| Pöhland Speditionsgesellschaft mbH | Germany |
| Polcont Sp. Z o.o. | Poland |
| Polzug Intermodal GmbH | Germany |
| Rail Cargo Austria AG | Austria |
| Rail Link Europe SAS | France |
| Railog GmbH | Germany |
| RaiLogistics | Switzerland |
| Rail Traction Company S.p.A. | Italy |
| Renfe Mercancias | Spain |
| Rocombi S.A. | Romania |
| Salzburger Lokalbahn (SLB) | Austria |
| SBB Cargo AG | Switzerland |
| SCT Transport AB | Sweden |
| Slovenske zeleznice, d.o.o. (SZ) | Slovenia |
| Sogemar S.p.A. | Italy |
| SPEDCONT Sp. Z o.o. | Poland |
| Spinelli srl | Italy |
| TAB S.A. /T3M | France |
| TCDD (Turkish State Railways) | Turkey |
| Transfesa Transportes Ferroviarios Especiales S.A. | Spain |
| Transfracht Internationale Gesellschaft für KV mbH & Co. KG (TFG) | Germany |
| Trenitalia | Italy |
| T.R.W. S.A. | Belgium |
| TX Logistik AG | Germany |
| Vänerexpressen AB | Sweden |
| Van Dieren Maritime B.V. | Netherlands |
| VR Cargo | Finland |
| Weets-Bahn, Spedition Jakob Weets | Germany |
| Westfälische Landes-Eisenbahn GmbH | Germany |
| Wiener Lokalbahnen Cargo GmbH (WLC) | Austria |
| Wincanton GmbH, GB Intermodal | Germany |
| Z-Rail Spedition Zippel | Germany |
| ZSSK Cargo | Slovakia |

# List of figures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