



## **Competitive Impact of the Implementation of Gigaliners on Combined Transport in Europe**

**Paper presented to the Joint Press Conference**

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Frankfurt

# Analysis of the Implementation of Gigaliner Freight Vehicles on the Competition between Road and Combined Transport Rail/Road in Europe

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## Objective & Approach

## Objective: Analysis of the Competitive Impact of Gigaliners on Combined Transport based upon 388 specific Door-Door-Transport Chains

### Starting Point

- Operation of Gigaliner trucks in Scandinavia for years
- Increasing number of test operations in Germany & the Netherlands
- Restricted discussion up to now:  
Focus on wear & tear of roads and reduction of truck movements on motorways
- **Start of implementation without full assessment of impacts**

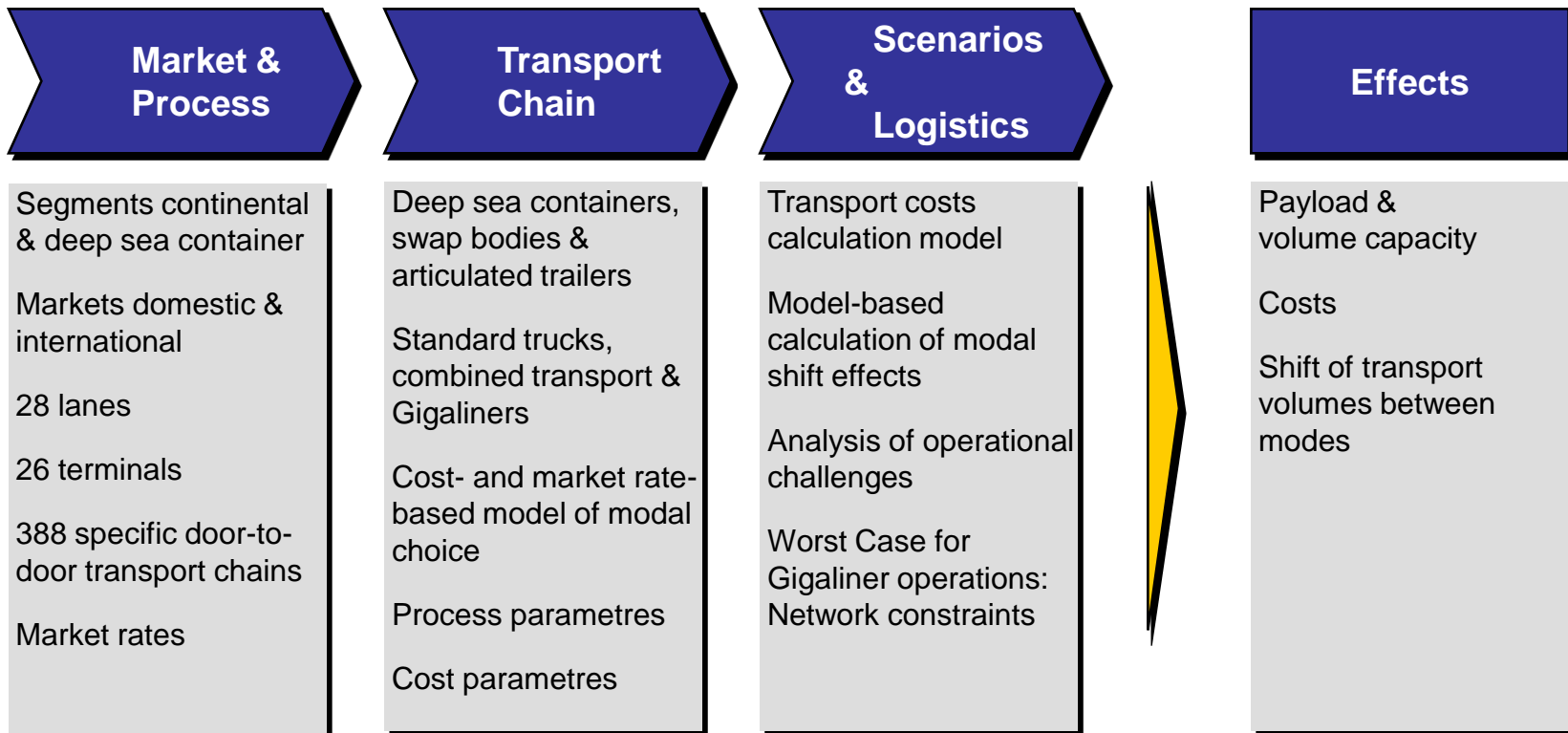
### Objectives in Detail

- Analysis of competitive impacts of the implementation of Gigaliner freight vehicles
- Competition with combined transport:
  - Domestic & international
  - Continental & deep sea container
- Cost-based analysis of choice of transport modes:  
Specific door-to-door transport chains
- Analysis of operational challenges



# Task: Model-based Calculation of the Costs of Standard Truck, Gigaliner and Combined Transport related to 388 specific Door-Door-Transport Chains in Europe

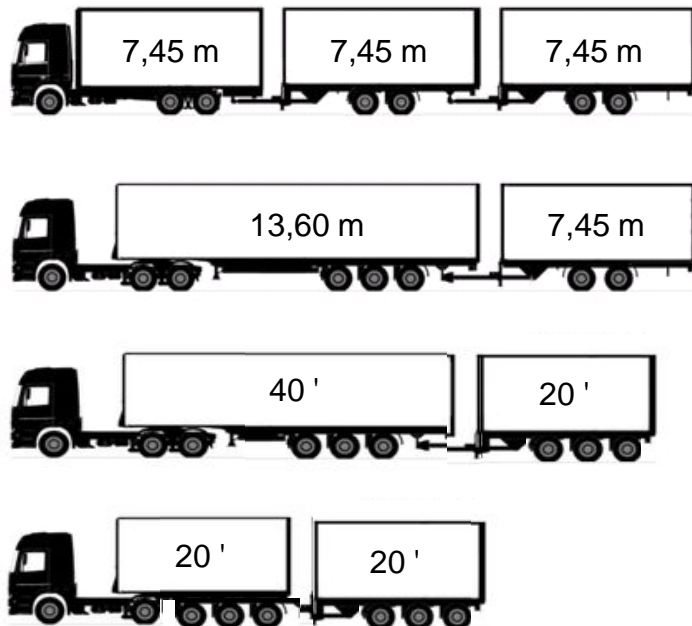
## Proceeding



## Basics

## Focus on Gigaliner-Types as proposed by Manufacturers. Gigaliners increasing Truck Capacity by at least 50 %

### Gigaliner-Types



### Key Parametres

	Standard Trucks	Gigaliner	Capacity
Max. Gross t	40	60	+ 50%
Payload t	22 - 26	36 - 42	+ 60%
Volume cbm	85 - 95	130 - 140	+ 50%
EURO-Pallets	33 - 36	51 - 54	+ 50%

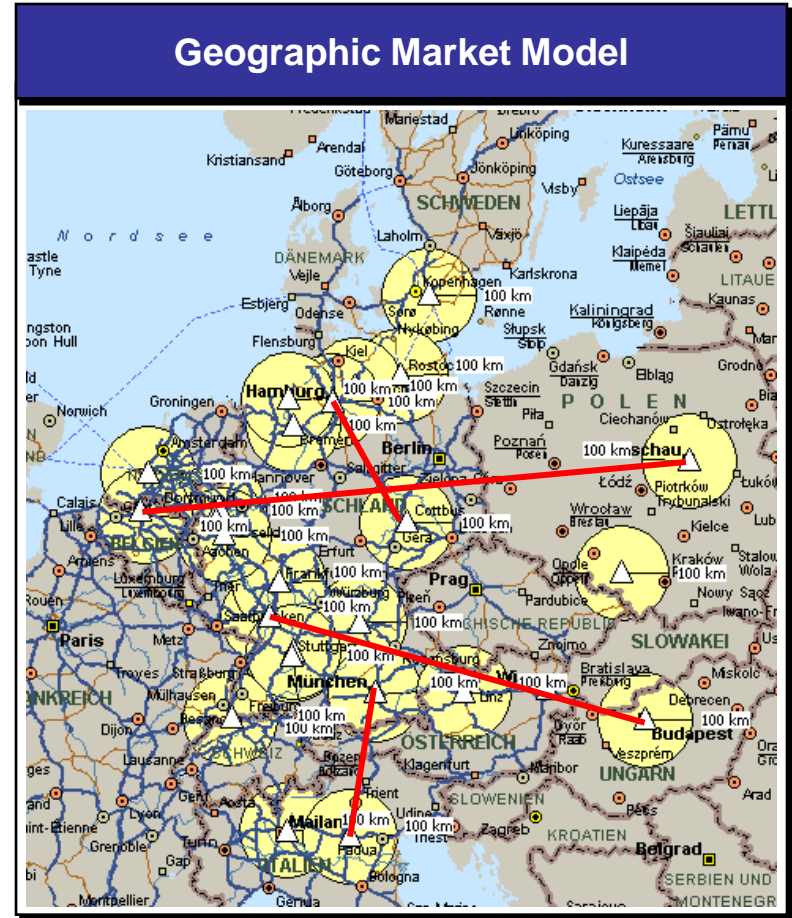
- Swap body 7,45 m  
 Articulated trailer 13,60 m
- Deep sea container 20 ft (6,06 m)  
 Deep sea container 40 ft (12,12 m)

➤ **Standard loading units of combined transport in Europe**

➤ **Decrease of road transport costs by 20 – 25 %**

# Analysis of the four Market Segments of Combined Transport in Europe based on the Costs of 388 specific Door-Door-Transport Chains

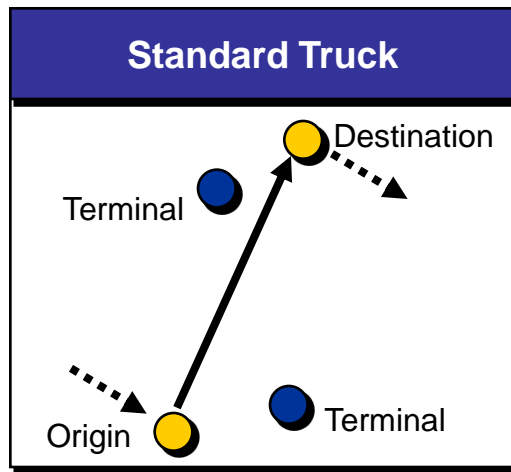
## Market Segments



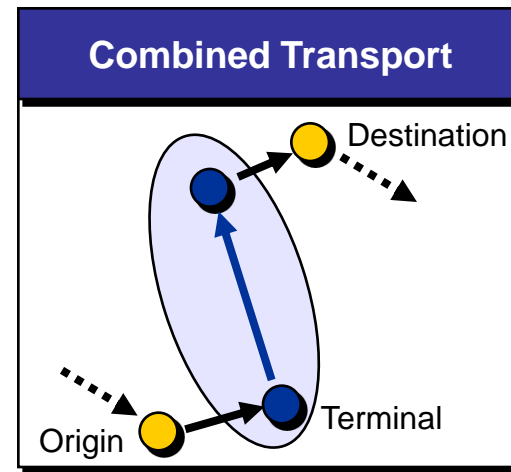
— Lanes terminal – terminal (examples)

# Model-based Calculation of the Costs of Standard Truck and Combined Transport

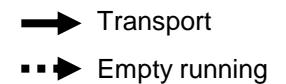
## Basic Models of Transport Chain



- Direct transport from origin to destination
- Costs-minimising routing

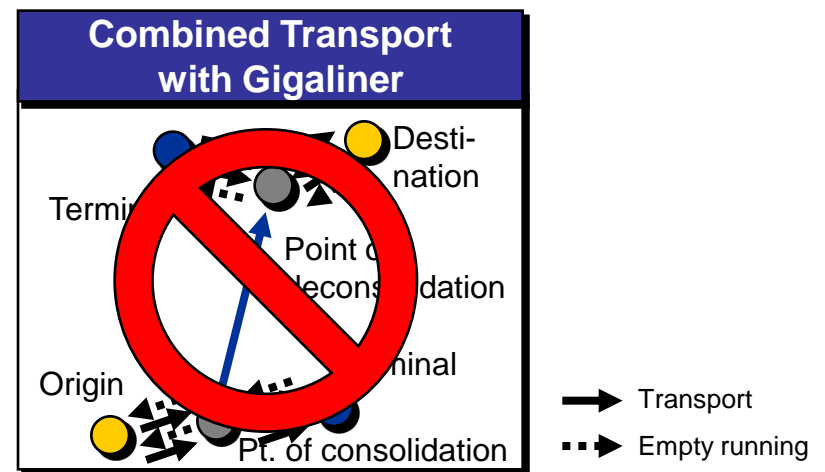
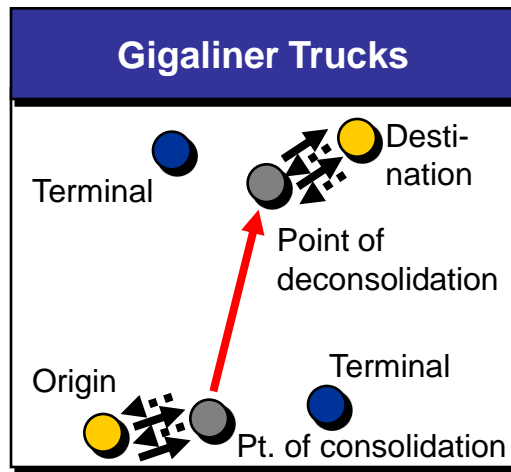




- Continental transport:  
Pre-carriage from origin to terminal
- Deep sea container transport:  
Transshipment at ports
- Trunk transport on rail
- On-carriage to destination



## Model assuming Gigaliner Operation constrained to Motorways – representing the Worst Case its Use

### Basic Models of Gigaliner Transport Chains



 Transport  
 Empty running

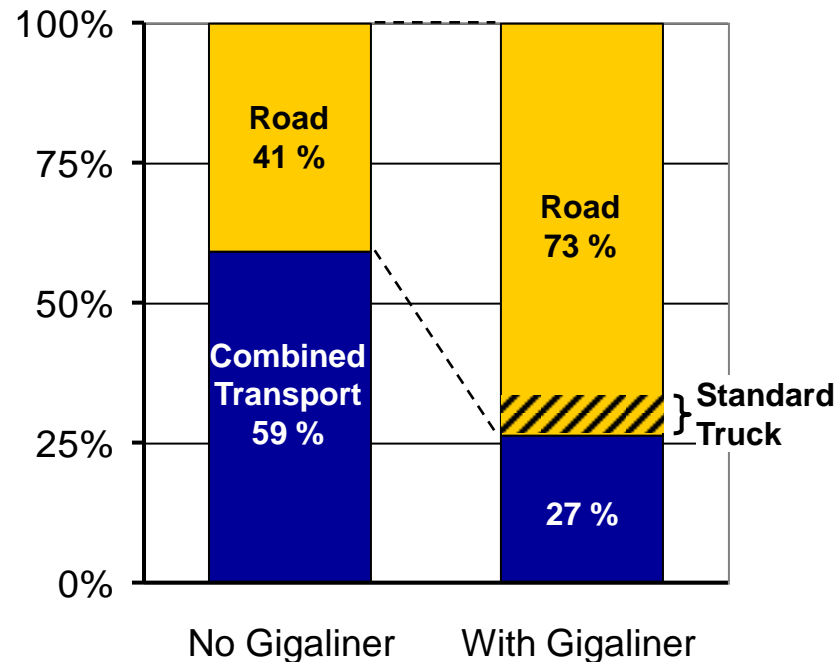
- Assumption: Gigaliner operation constrained to motorways etc.
- Points of (de-) consolidation needed at exits
- Pick up & delivery without additional trailer

- Assumption: Gigaliner operation constrained to motorways etc.
- Space within & close to terminals not sufficient for Gigaliner operation
- **Limited use of Gigaliners possible**

## Competitive Impact

## Cost Advantage of Giga liners changing Modal Competition substantially. Potential of Shifting up to 55 % of Combined Transport Volumes to Road

### Development in focussed Market

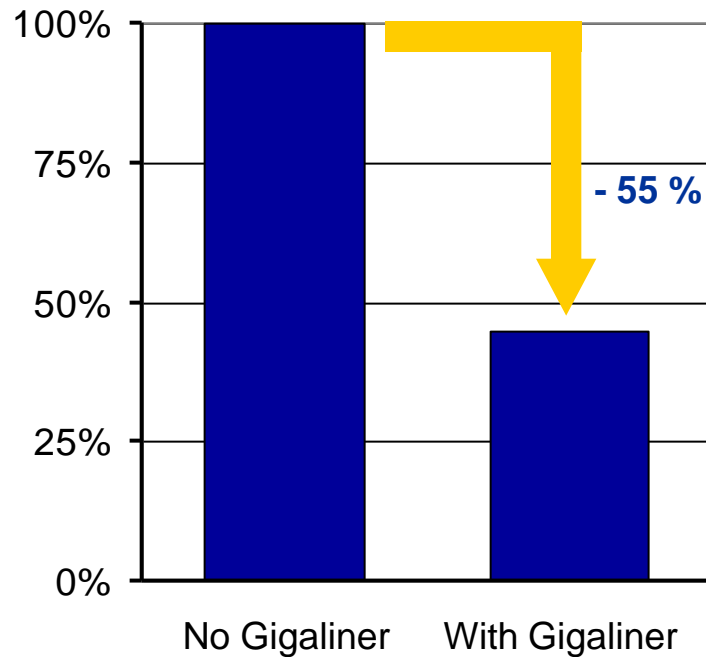


### Key Messages

- Focus on strong lanes and specific door-door-transport chains of combined transport
- Costs as criterion for choice of transport mode – schedule, transit time etc. not taken into account
- At present limited cost advantage of combined transport in general
- Cost reduction in road transport leading to substantial shift of transport volumes to road
- Decrease of combined transport volumes of up to 55 % in focussed market

## Key Finding: Substantial Impact by Gigaliners on Competition Road – Rail. Potential of Shifting up to 55 % of Combined Transport Volumes to Road

### Change of Combined Transport Volumes

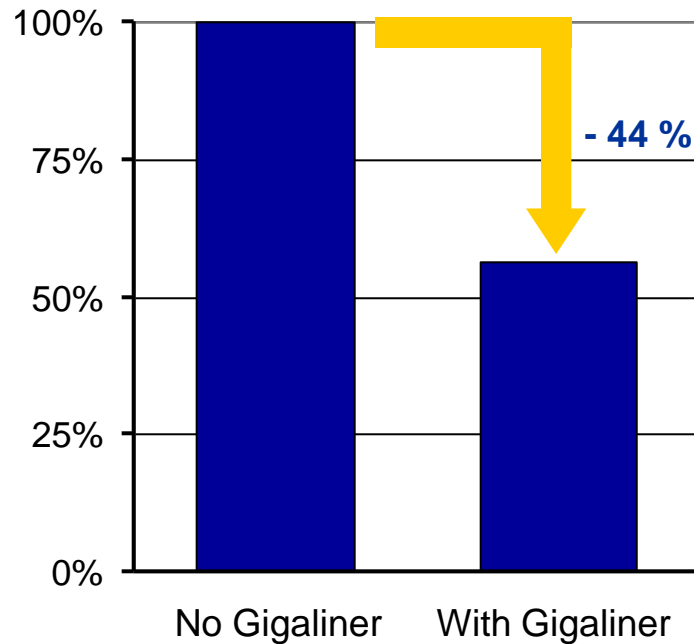


### Key Findings

- Cost reduction of road transport by 20 – 25 %
- Cost-driven substantial impact on competition between modes of transport
- Shift of up to 55 % of combined transport volumes onto road
- Increase of number of truck movements in focussed market

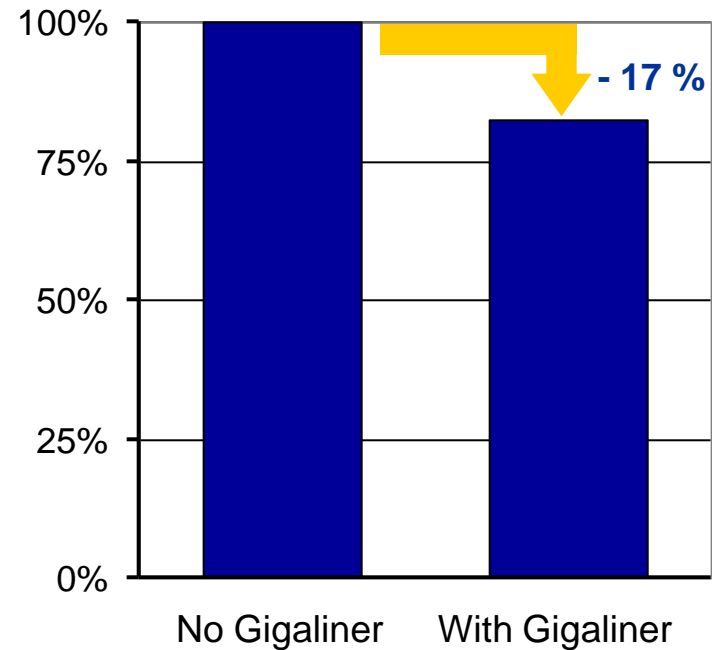
## Quickly growing Deep Sea Container Transports affected by Modal Shift despite Cost Advantage of Transshipment at Ports. Particular Impact on private Railways

**Change of Deep Sea Container Transport domestic**



- Transshipment at port – no pre-carriage needed
- Strong competitive advantage of combined transport at present

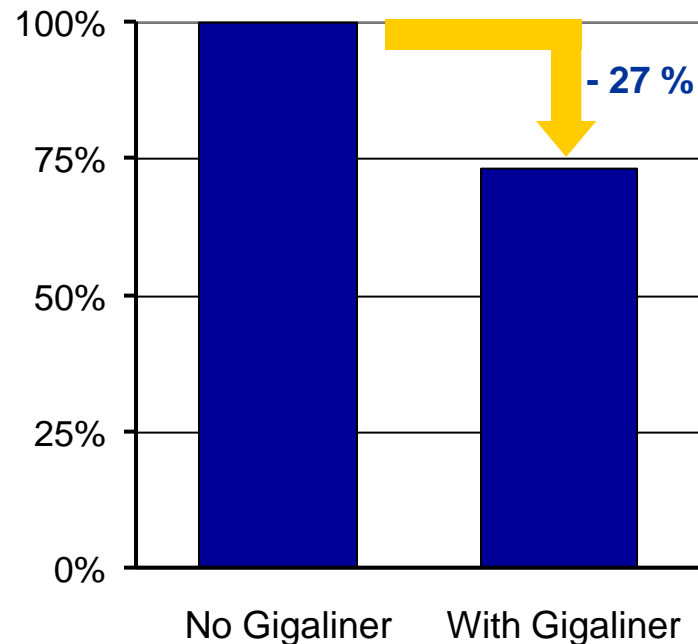
**Change of Deep Sea Container Transport international**



- Gigaliner doubling truck capacity in 20 ft deep sea container transport
- Annual growth of deep sea container transport of 15 %

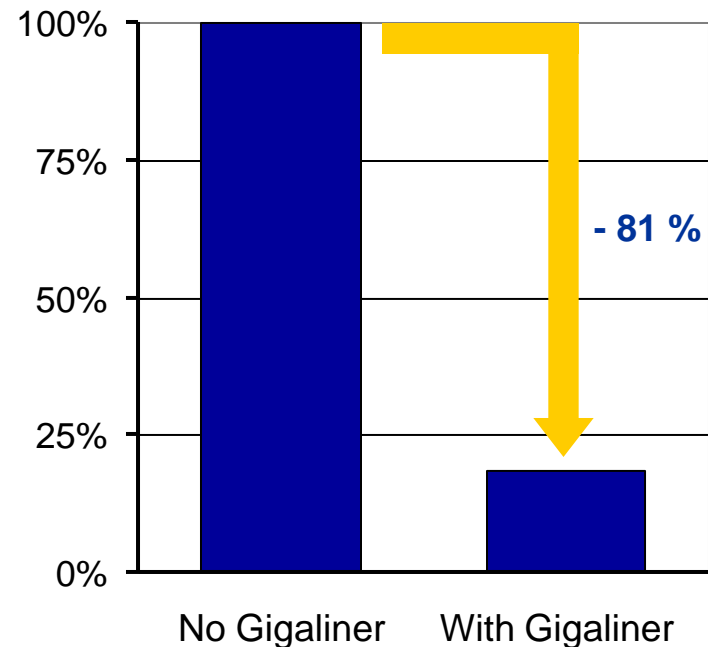
## Strong Impact on Continental Transport. Gigaliner-Shuttles in Transit Transports through Germany

**Change of Continental Transport domestic**



- Constraining Gigaliner operation to motorway network
- Disadvantage on short distances part

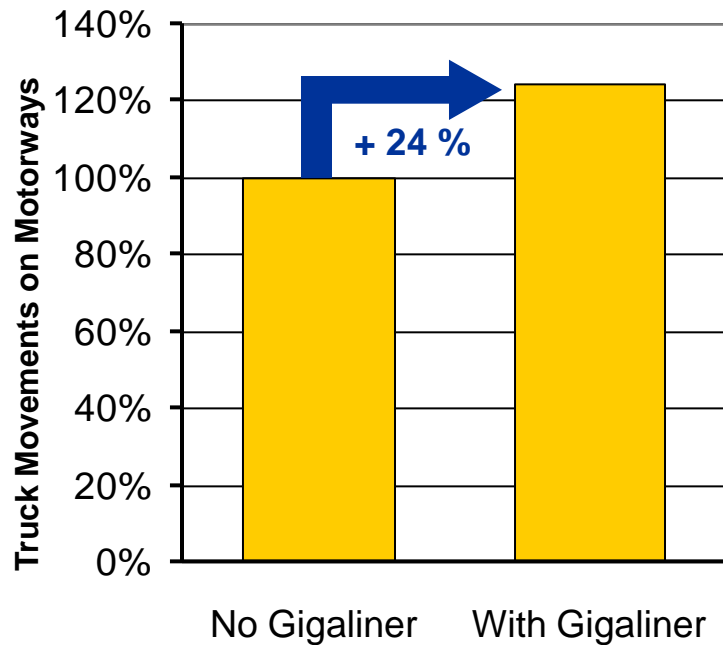
**Change of Continental Transport international**



- Use of Ginaliners for low-cost shuttling of transit loads
- Relays to non-Gigaliner-countries

## Decreasing Road Transport Costs leading to Shift of Combined Transports to Road and to the Increase of Road Traffic in focussed Market

### Impact of Gigaliners on Truck Movements on Motorways











### Key Messages

- Costs reduction in long distance transport by trucks by 20 – 25 %
- Shift of combined transport volumes to roads
- Partly compensation by reduced no. of movements of standard trucks (due to increase of truck capacity by 50 %)
- **In total increase of truck movements by 24 % in focussed transport market**

## Operational Challenges & Problems

# Gigaliners right away increasing local Traffic or introducing extra large Trucks on local Roads. Investment into (De-) Consolidation Points needed

## Alternative Operations Concepts of Gigaliners

	Network Concept <sup>1)</sup>	Unconstrained
Long Distance Movements		
Points of (De-) Consolidation		
Short Distance Movements		
Impact on local Roads		

### Network Concept

- Need for points of (de-) consolidation close to motorway intersections: Investments
- Increase of local truck traffic from/to points of (de-) consolidation

### Unconstrained Operations

- Gigaliner traffic on local roads
- Impact on/at
  - Mixed traffic with cars, cycles etc.
  - Crossings
  - Roundabouts
- **Comprehensive assessment of technology's impact necessary**

1) Constraining of Gigaliner operations on motorway network etc., assumed in study