TransBaltic

Towards an integrated transport system in the Baltic Sea Region

Factors affecting the choice of transport mode.

Transport service assessment rates.

Poznań, 10 June 2010

Marcin Hajdul

Project part-financed by the European Union (European Regional Development Fund)

Baltic Sea Region Programme 2007-2013

PRESENTATION AIM

To present factors affecting the choice of a given transport mode by enterprises and to describe rates that allow for the assessment of transport services.

AGENDA

- Introduction – why are we talking about this?
- Factors affecting transport mode choice
- Transport service assessment rates
- Conclusions

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Transport in Europe is still dominated by road transport.

Intermodal transport is only beginning to develop in Poland. Its share amounts to 2-3%.

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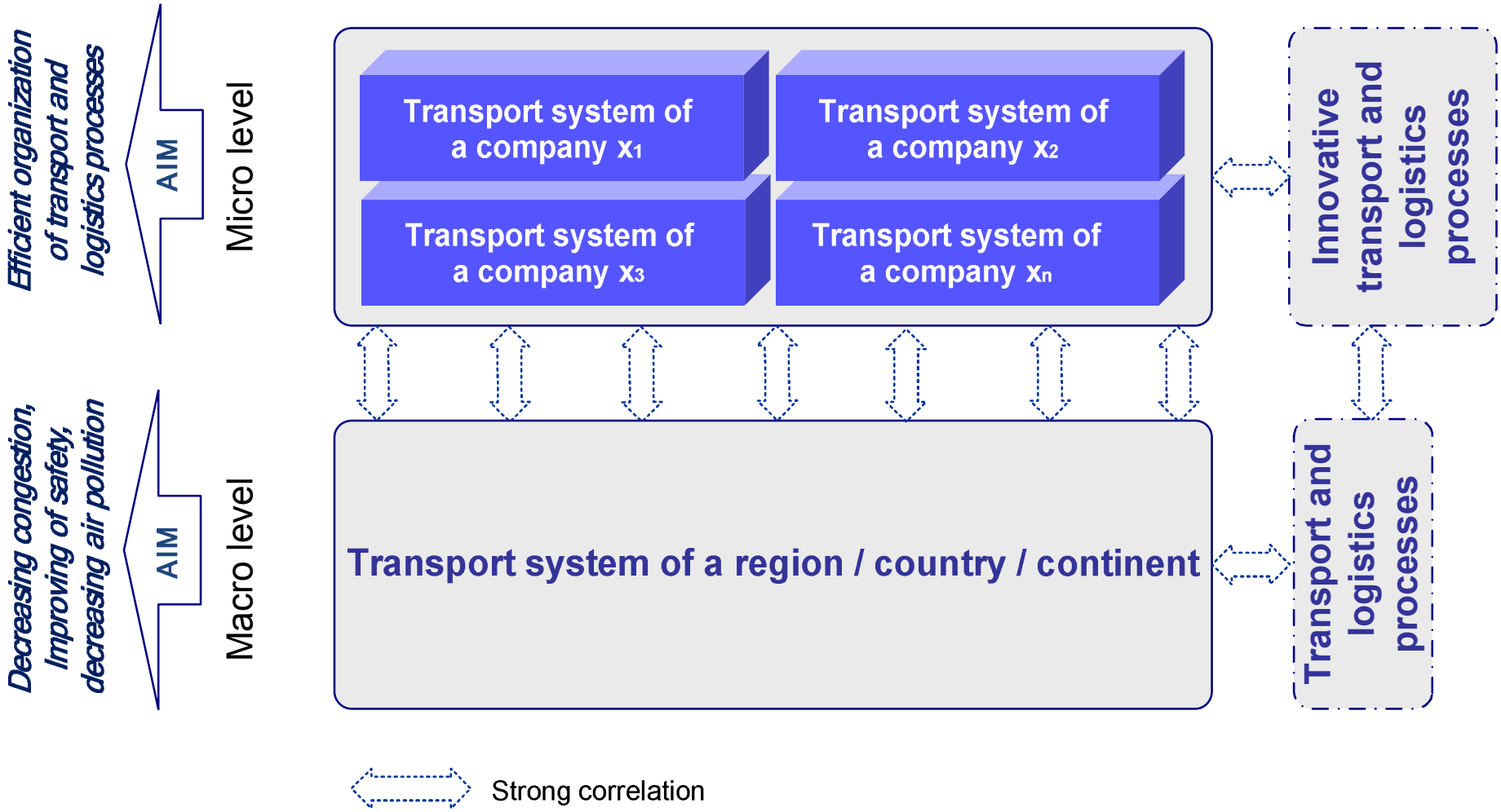

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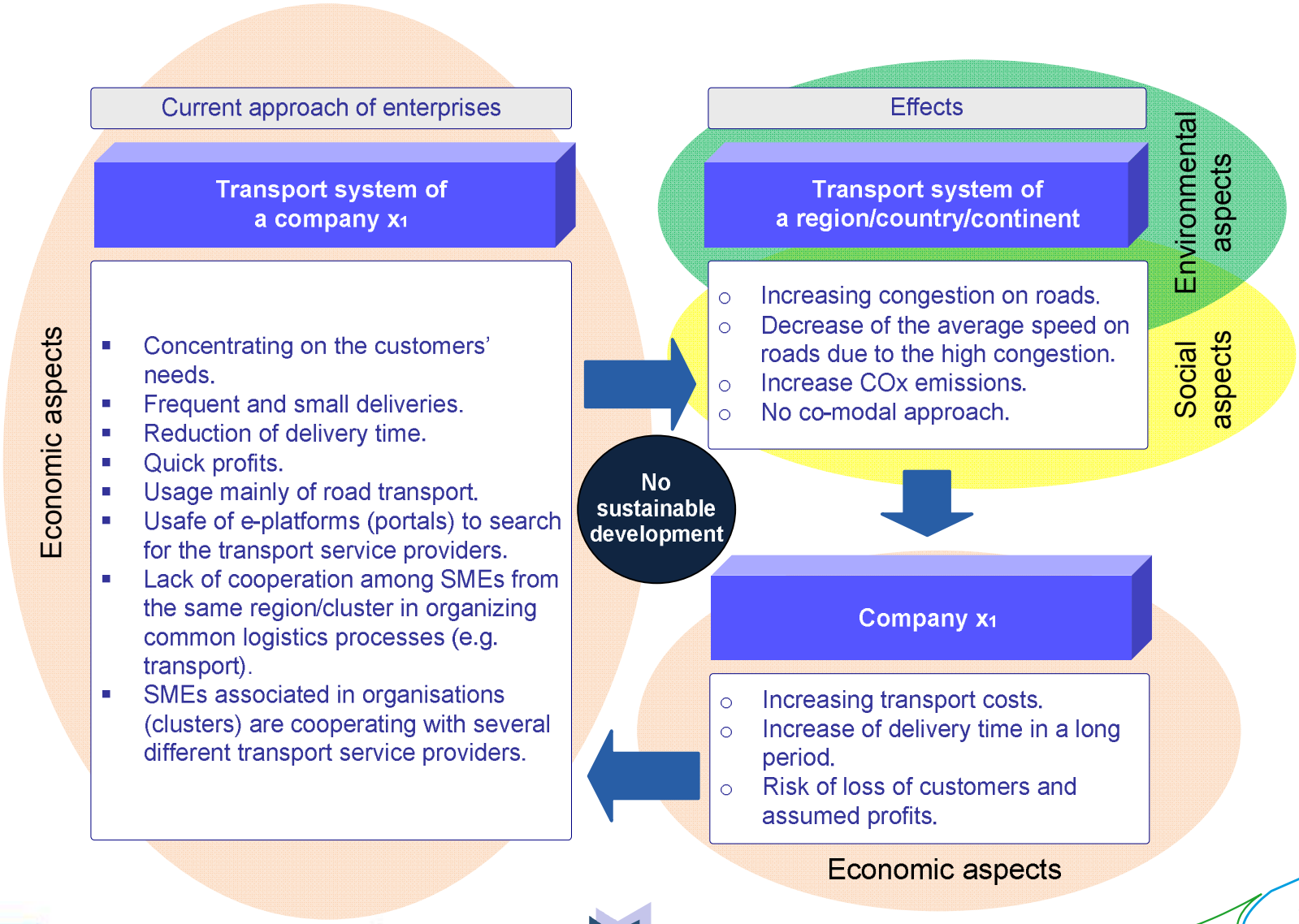

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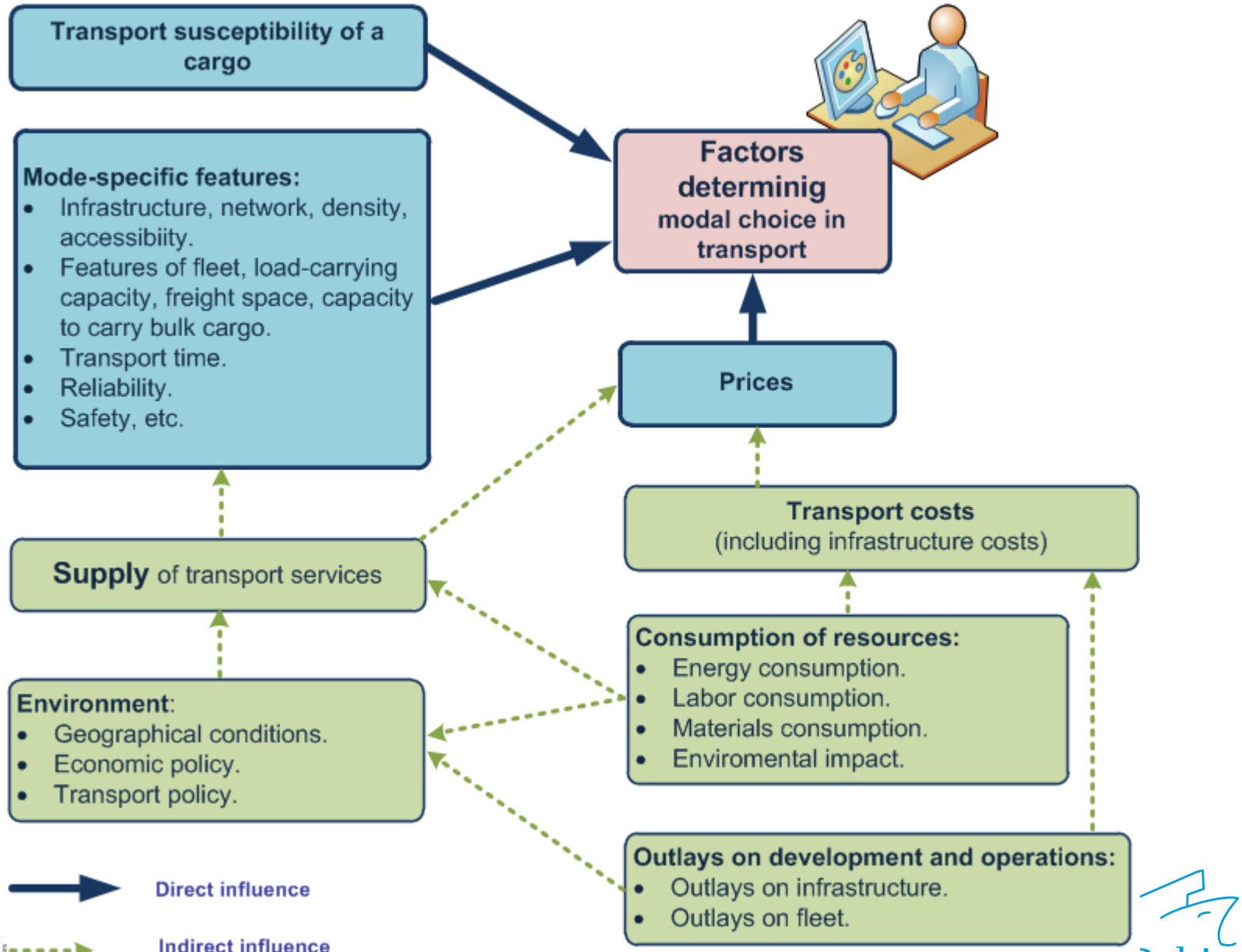
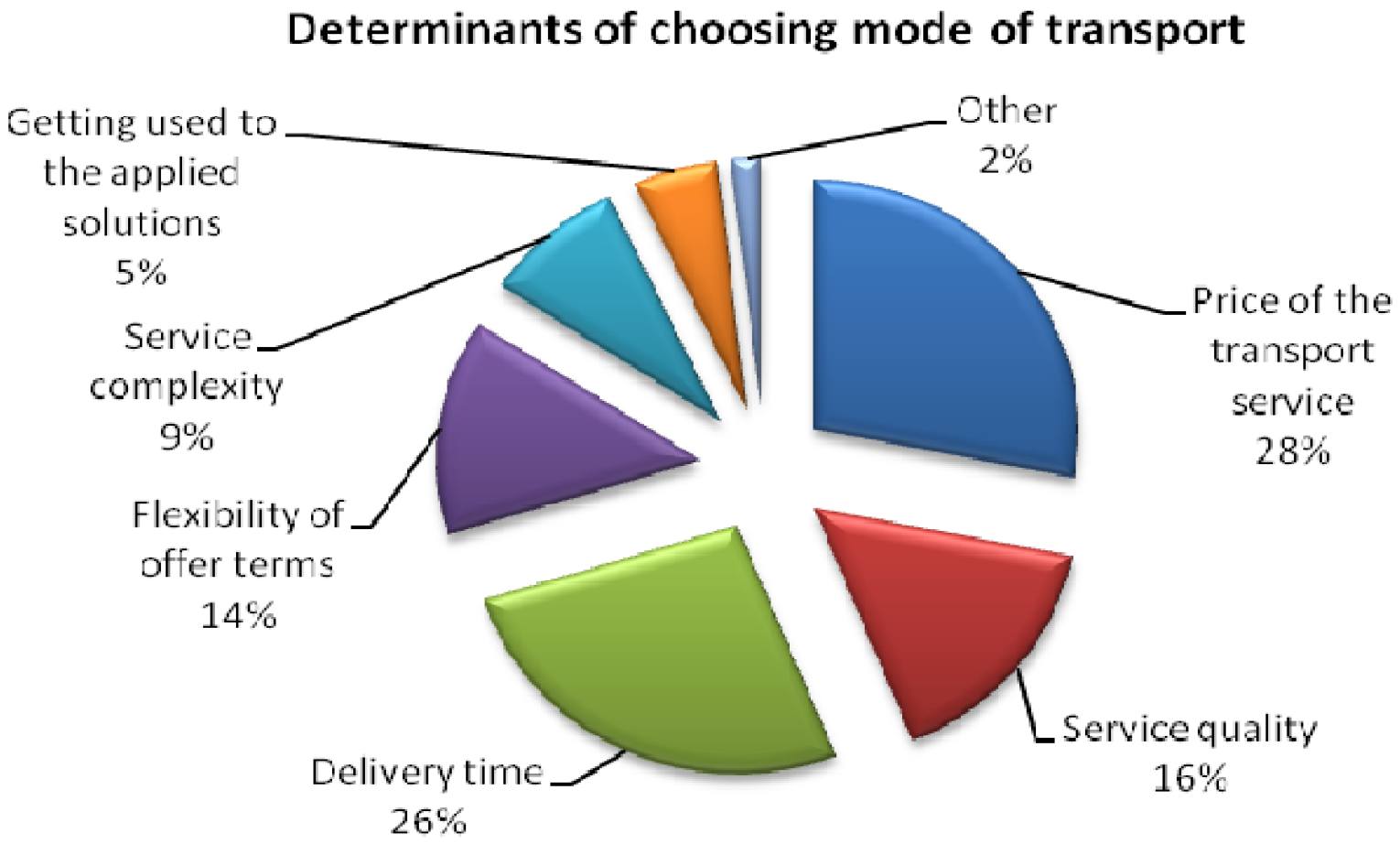
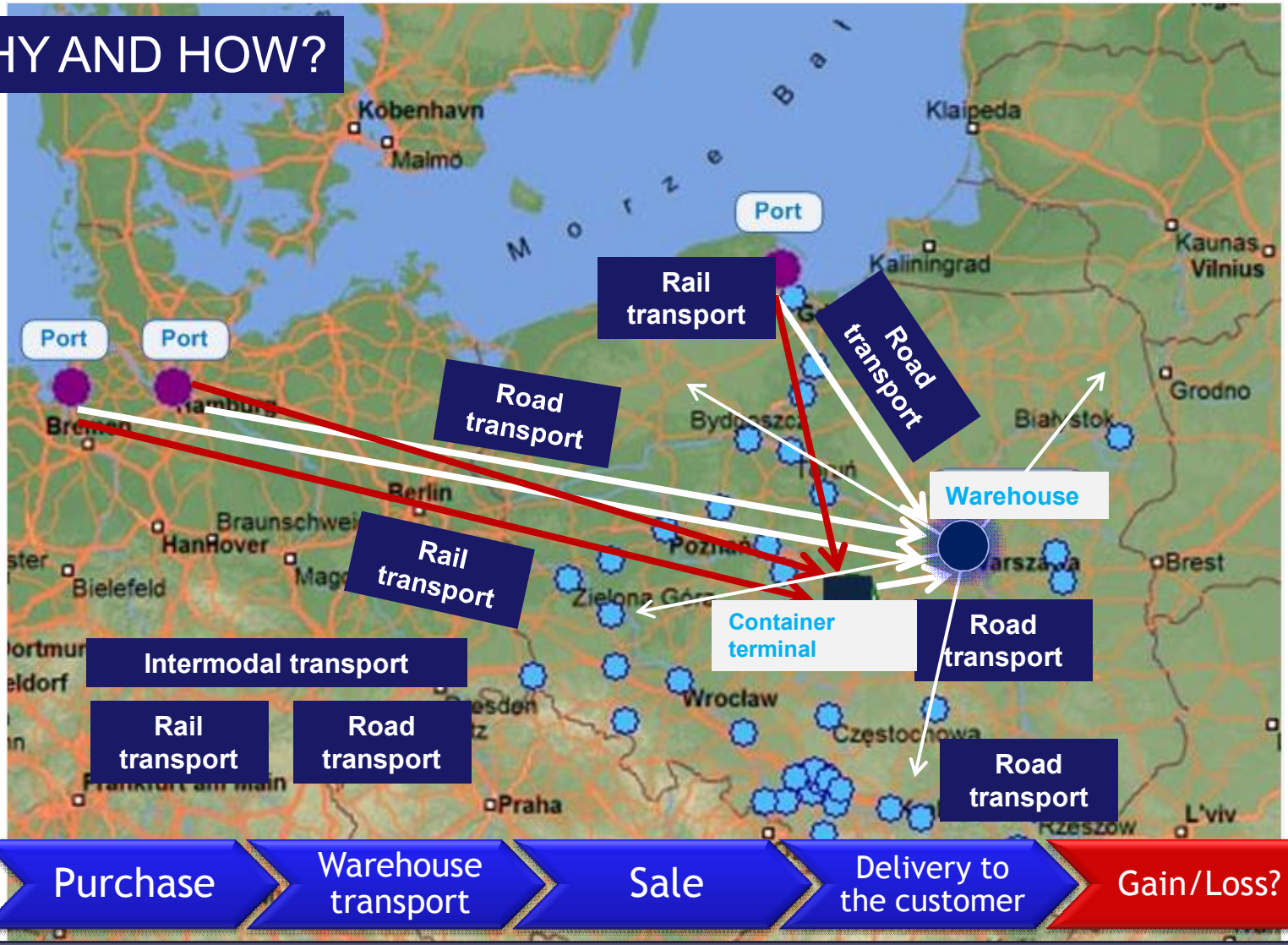

Transport susceptibility of a cargo
Mode-specific features:
• Infrastructure, network, density, accessibiity.
• Features of fleet, load-carrying capacity, freight space, capacity to carry bulk cargo.
• Transport time.
• Reliability.
• Safety, etc.
Factors determinig modal choice in transport
Prices
Transport costs (including infrastructure costs)
Supply of transport services
Consumption of resources:
• Energy consumption.
• Labor consumption.
• Materials consumption.
• Enviromental impact.
Environment:
• Geographical conditions.
• Economic policy.
• Transport policy.
Outlays on development and operations:
• Outlays on infrastructure.
• Outlays on fleet.
Direct influence
Indirect influence


Determinants of choosing mode of transport
Getting used to the applied solutions 5%
Other 2%
Service complexity 9%
Price of the transport service 28%
Flexibility of offer terms 14%
Service quality 16%
Delivery time 26%

WHY AND HOW?



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TransBaltic
Towards an integrated transport system in the Baltic Sea Region

Transport process monitoring

Transport users

Purchase → Warehouse transport

Road transport total cost

Dispatch location (e.g. port) → **Pick-up location (e.g. warehouse)**

Intermodal transport (rail-road) total cost

Dispatch location → **Transshipment location** → **Pick-up location**

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Transport process monitoring

Transport users

Purchase → Warehouse transport

Warehouse transport cost per l/kg/pallet/km = transport cost / number of l/kg/pallets transported or km covered

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Transport process monitoring

Transport users

Purchase → Warehouse transport

Road transport total time

Dispatch location (e.g. port) → **Pick-up location (e.g. warehouse)**

Intermodal transport (rail-road) total time

Dispatch location → **Transshipment location** → **Pick-up location**

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Transport process monitoring

Transport users

Purchase → Warehouse transport → Sale → Customer delivery

Direct delivery costs

Dispatch location (e.g. port) → **Pick-up location (e.g. warehouse)**

Cross – docking delivery costs

Dispatch location → **Pick-up location**

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Transport process monitoring

Transport users

Purchase → Warehouse transport → Sale → Customer delivery

Indirect delivery time

Dispatch location (e.g. port) → **Pick-up location (e.g. warehouse)**

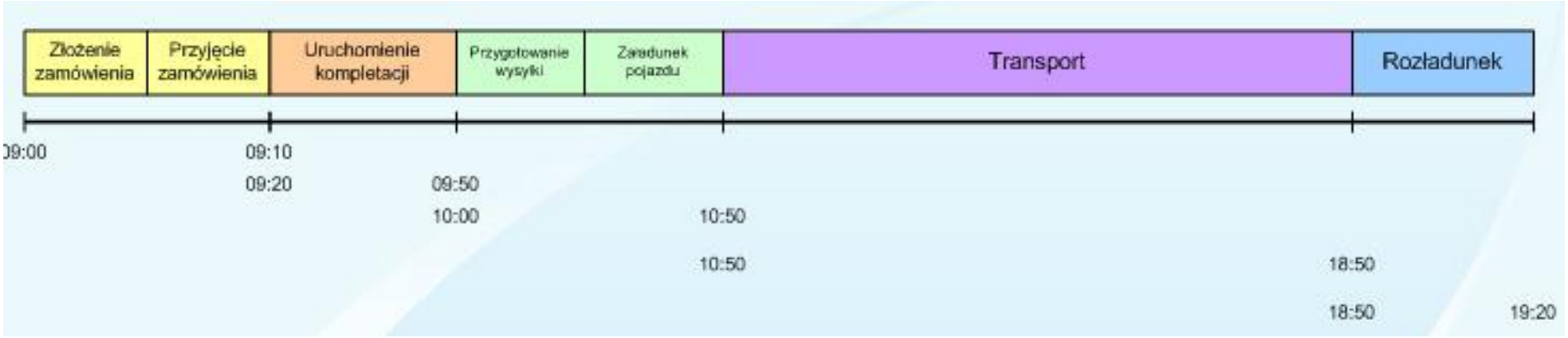
Cross – docking delivery time

Dispatch location → **Transshipment location** → **Pick-up location**

Transport process monitoring

Transport users

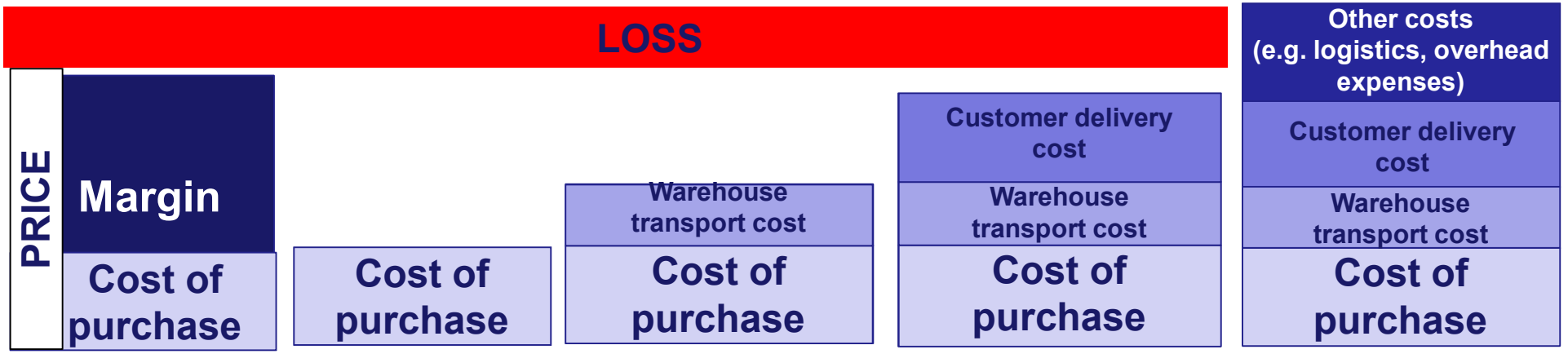
Purchase → Warehouse transport → Sale → Customer delivery

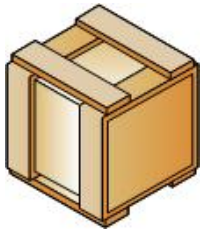


Transport process monitoring

Purchase → Warehouse transport → Sale → Customer delivery → Gain/Loss?

Transport users





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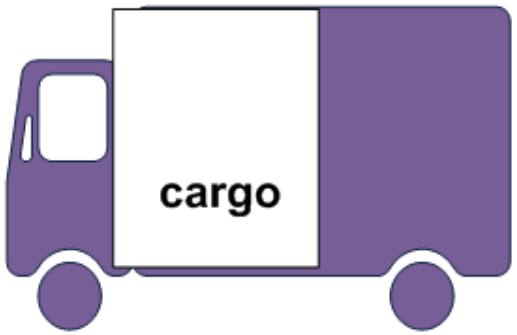
Transport process monitoring

Load factor

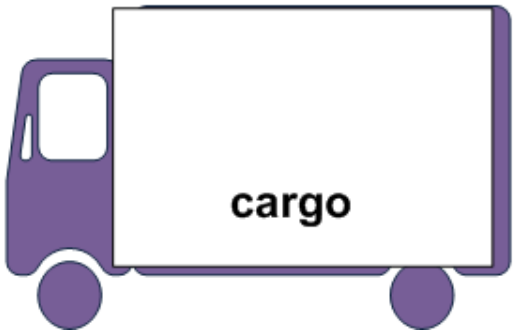
Poor – high transport cost per transport unit



Good – acceptable transport cost per transport unit

Difficult to achieve in all cases

Very good – the lowest transport cost per transport unit



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BENCHMARKING IN TRANSPORT

Benchmarking is a continuous process of measuring current business operations against 'best-in-class' operations. The information obtained constitutes a basis for the development of operational plans, which define ways of meeting or surpassing best practice standards.

(AT & T Benchmarking Group)

„Benchmark”:

- Measurement, criterium
- Datum point
- Basis **(in statistics)**

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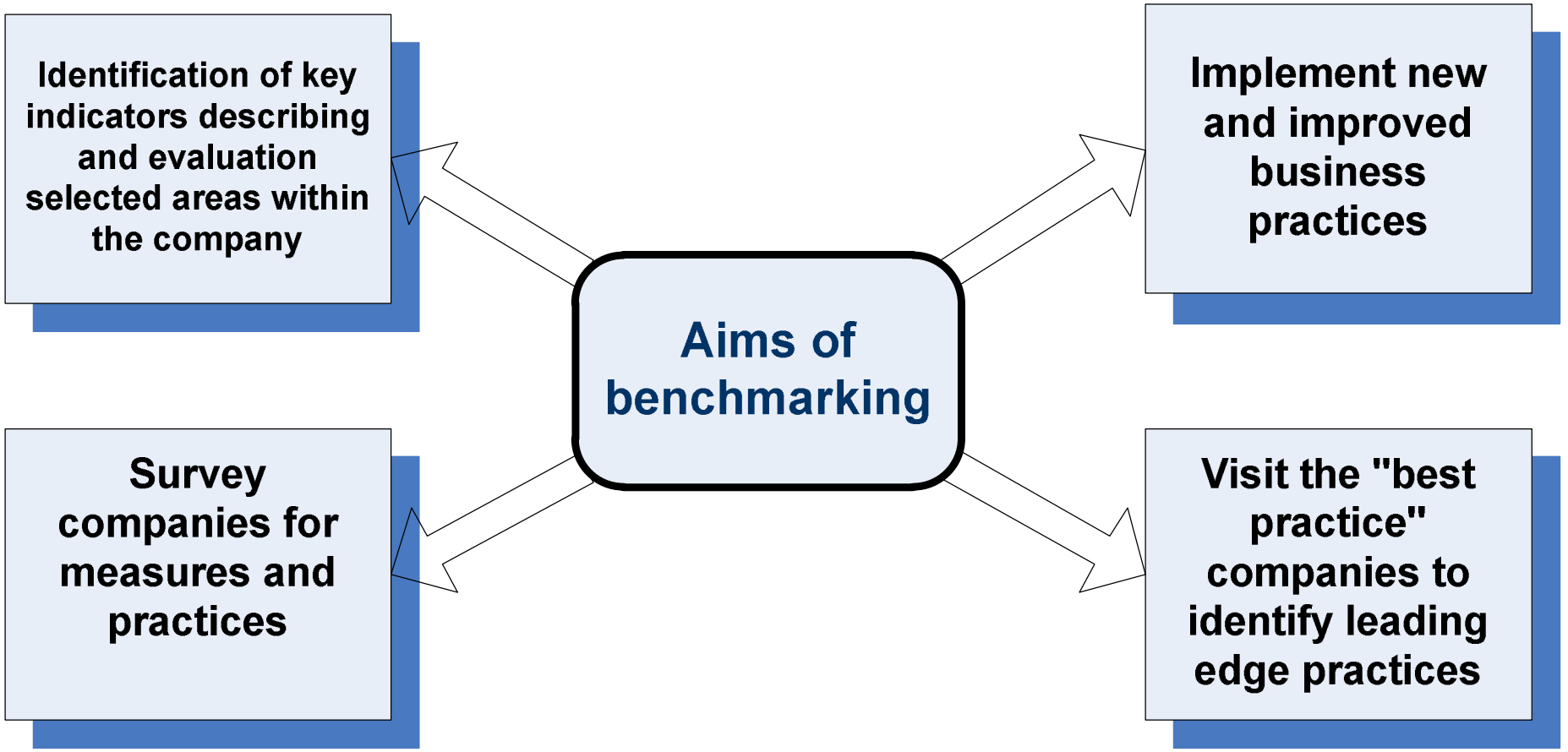
BENCHMARKING IN TRANSPORT



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BENCHMARKING IN TRANSPORT

competitive benchmarking – measuring the performance of a given company and comparing it to rival company's performance

collaborative benchmarking– characterised by activity consolidation to exchange knowledge and experience between companies

internal benchmarking – used in large multi-department companies

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BENCHMARKING IN TRANSPORT

Stage one – PREPARATION:

- Set up a working group
- Define group members' expectations
- Define common research aim and expected results
- Develop research schedule

Stage two – PLANNING:

- Define research area and scope
- Define research methodology – analysed meter set
- Identify possible data sources and choose the best methods of collectig it

Stage three – DATA COLLECTION

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BENCHMARKING IN TRANSPORT

- **Stage four – ANALYSIS:**
  - Data processing and cleansing
  - Data verification and completion
  - Meter value assignement
  - Meter value verification
  - Report preparation

- **Stage five – INTEGRATION:**
  - Announcement of benchmark analysis results
  - Comon discussion on the results
  - Conclusions for the future

- **Stage six – IMPLEMENTATION**

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BENCHMARKING IN TRANSPORT

Transport users

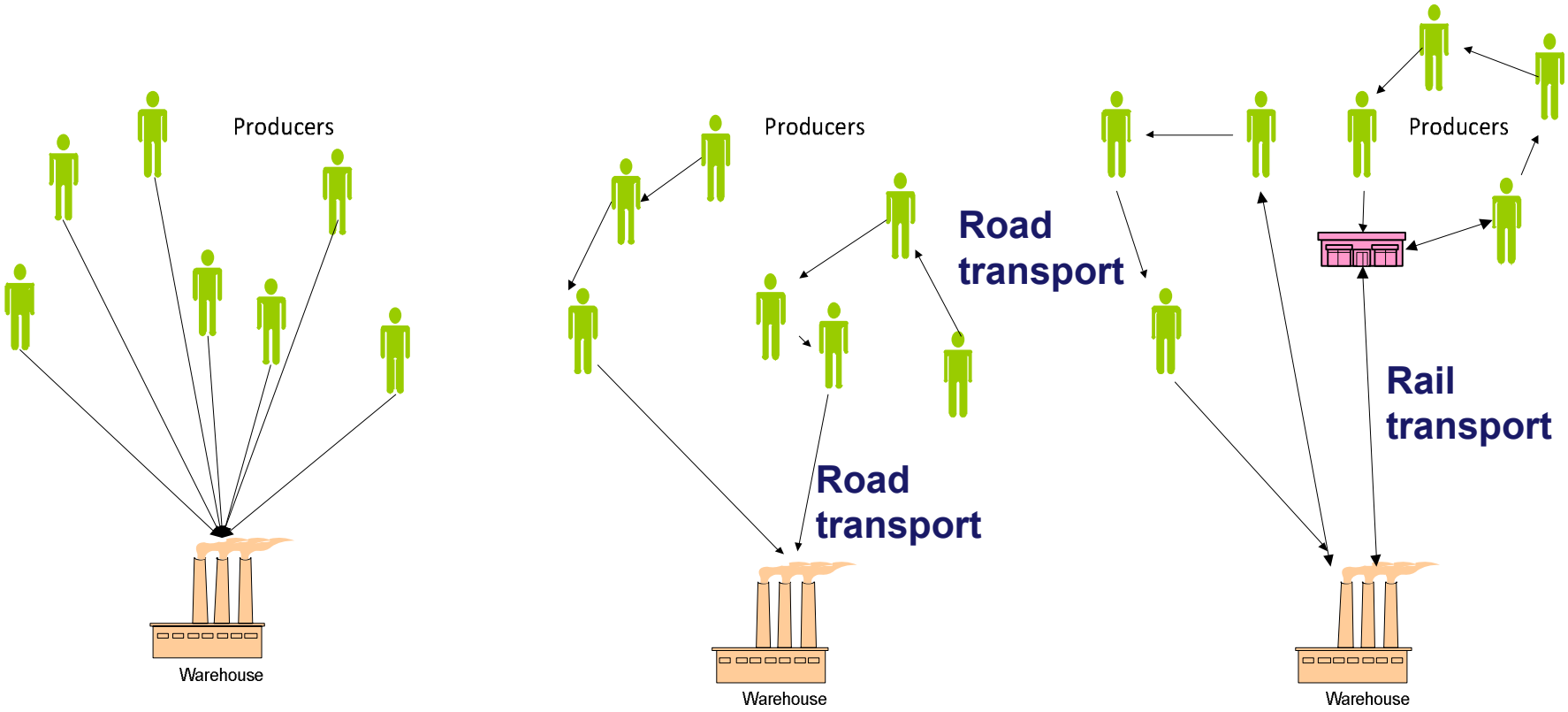
Transport service providers

Public bodies

Rolling stock effective use rate = $\frac{\text{number of orders fulfilled by an outside carrier}}{\text{total number of orders}}$

Customer Perfect Order Rate = $\frac{\text{number of orders fulfilled on time and in appropriate quantity}}{\text{total number of orders}}$

MICRO AND MACRO SCALE BENEFITS



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MICRO AND MACRO SCALE BENEFITS

No.	Parameters	Before improvement	After improvement
1	Total no. of full-vehicle deliveries	106	128
2	Total no. of mass cargo deliveries	43	21
3	Total no. of delivery vehicles	149	128
4	Decrease in no. of delivery vehicles	0%	14%
5	Total transport cost	100%	91%

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MICRO AND MACRO SCALE BENEFITS

Road number	Road name	Year 2005	
		Total number of vehicles	Total number of HGV
		Average daily traffic	Average daily traffic
196	Poznan – Murowana Goslina	13580	2160

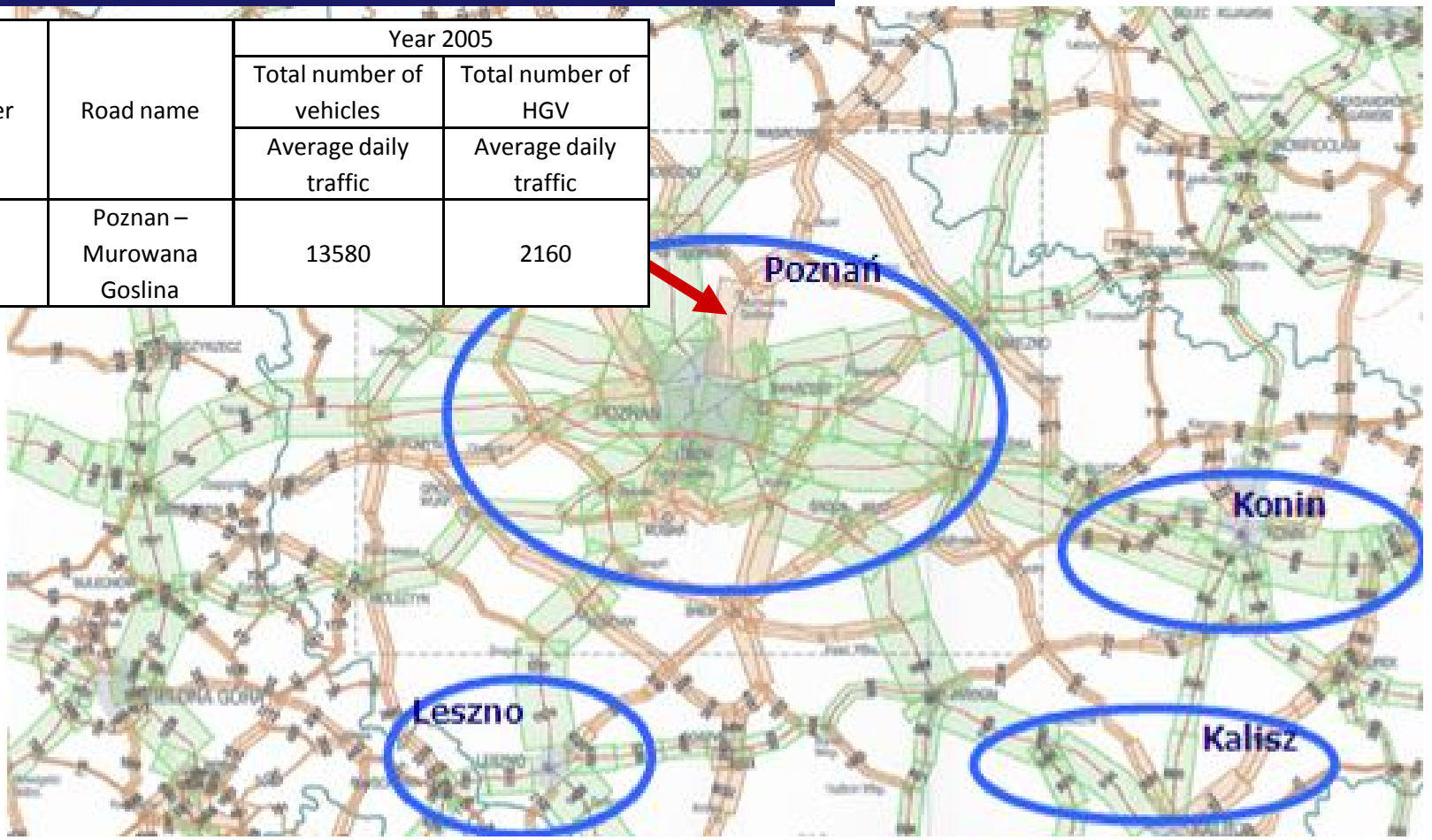

Fig. 1 Analysis of traffic intensity in the main idustrial centres of the Wielkopolska region
Source: ILiM's own analysis based on the Transprojekt Sp. z o.o. data

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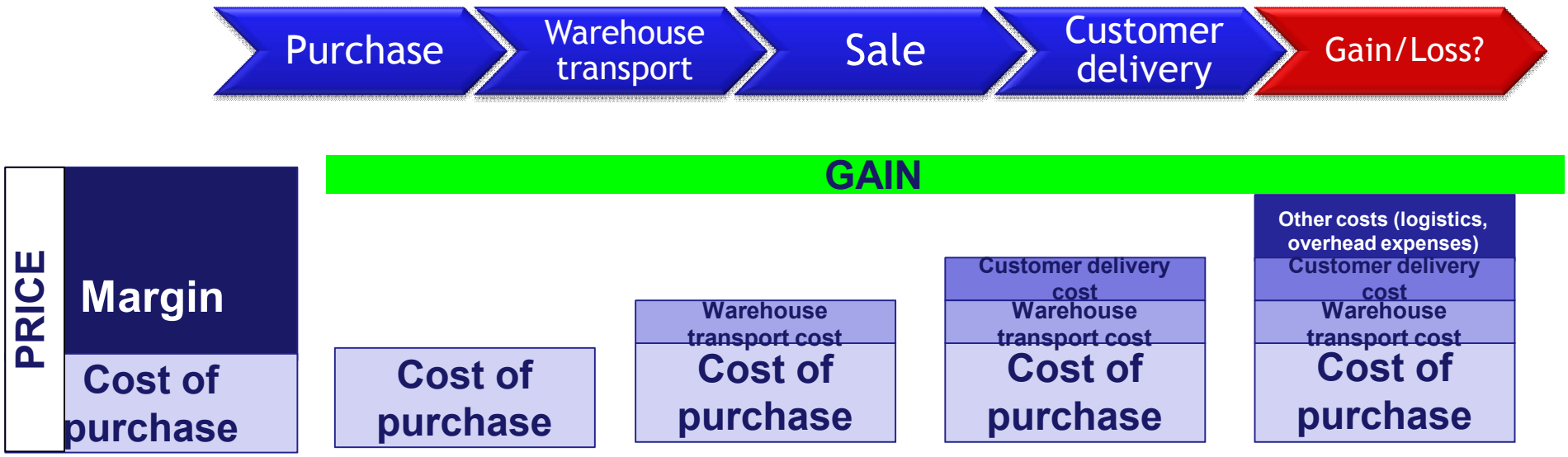
MICRO AND MACRO SCALE BENEFITS



DELIVERY TIME

Thank you for your attention

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