



I CONGRESO INTERNACIONAL SOBRE LA FERROVIARIA POR EL PIRINEO CENTRAL



Development of pan-European Rail-based Corridors – Challenges and Opportunities for Involved Parties

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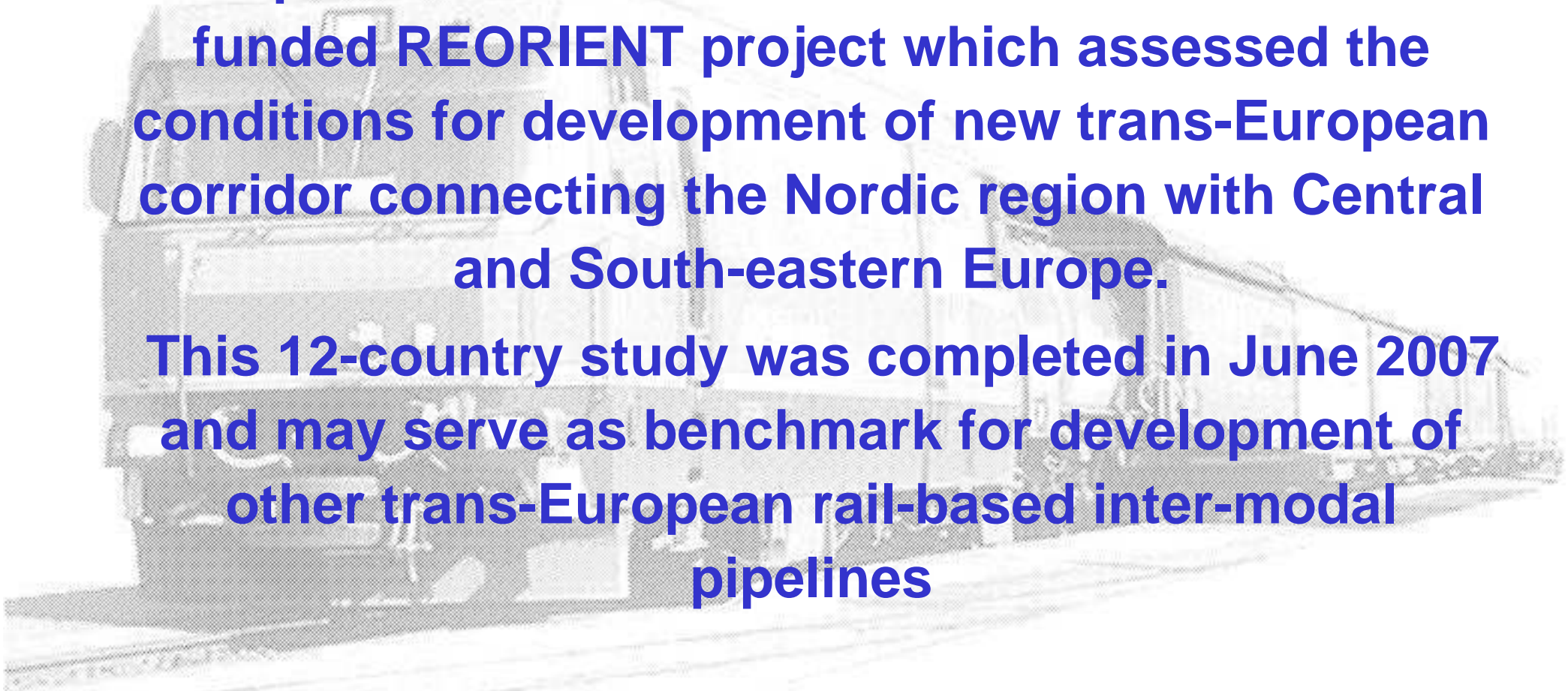


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This presentation is based on results from an EC-funded REORIENT project which assessed the conditions for development of new trans-European corridor connecting the Nordic region with Central and South-eastern Europe.

This 12-country study was completed in June 2007 and may serve as benchmark for development of other trans-European rail-based inter-modal pipelines





Objectives of REORIENT project:

- ☐ Assess how rail markets in these countries responded to EC's this policy
- ☐ Assess how improvements in rail freight service and rail infrastructure affect the rail industry's competitive standing in Europe
- ☐ Assess the socio-environmental impacts of the First Infrastructure Package (liberalising the rail freight in Europe)





REORIENT Corridor and Hinterland Countries



North:

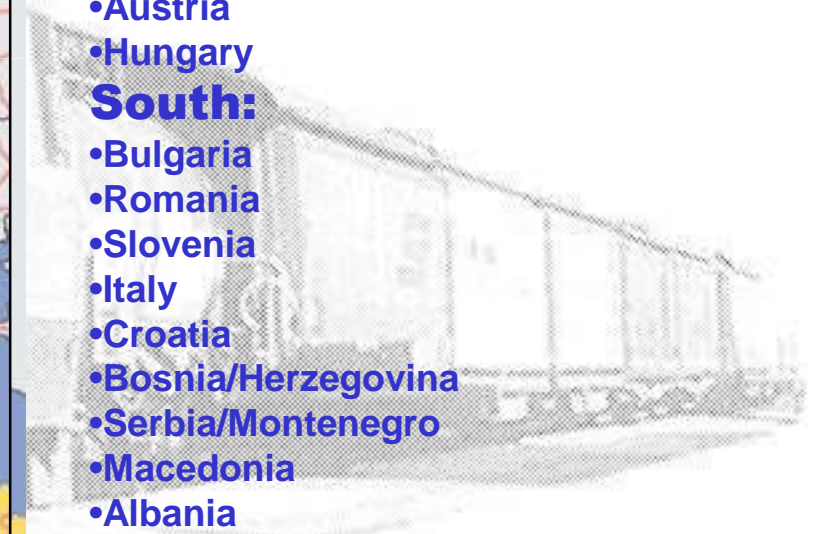
Sweden, Norway
and Finland

Central:

- Poland
- Czech Republic
- Slovakia
- Austria
- Hungary

South:

- Bulgaria
- Romania
- Slovenia
- Italy
- Croatia
- Bosnia/Herzegovina
- Serbia/Montenegro
- Macedonia
- Albania
- Greece
- Turkey





The REORIENT Network

- Spans 23 countries
- Rail portion
(Nodes;Arcs)=(5577;5753)
- Road portion
(Nodes;Arcs)=(4713;5460)
- Sea portion
(Nodes;Arcs)=(54;21)



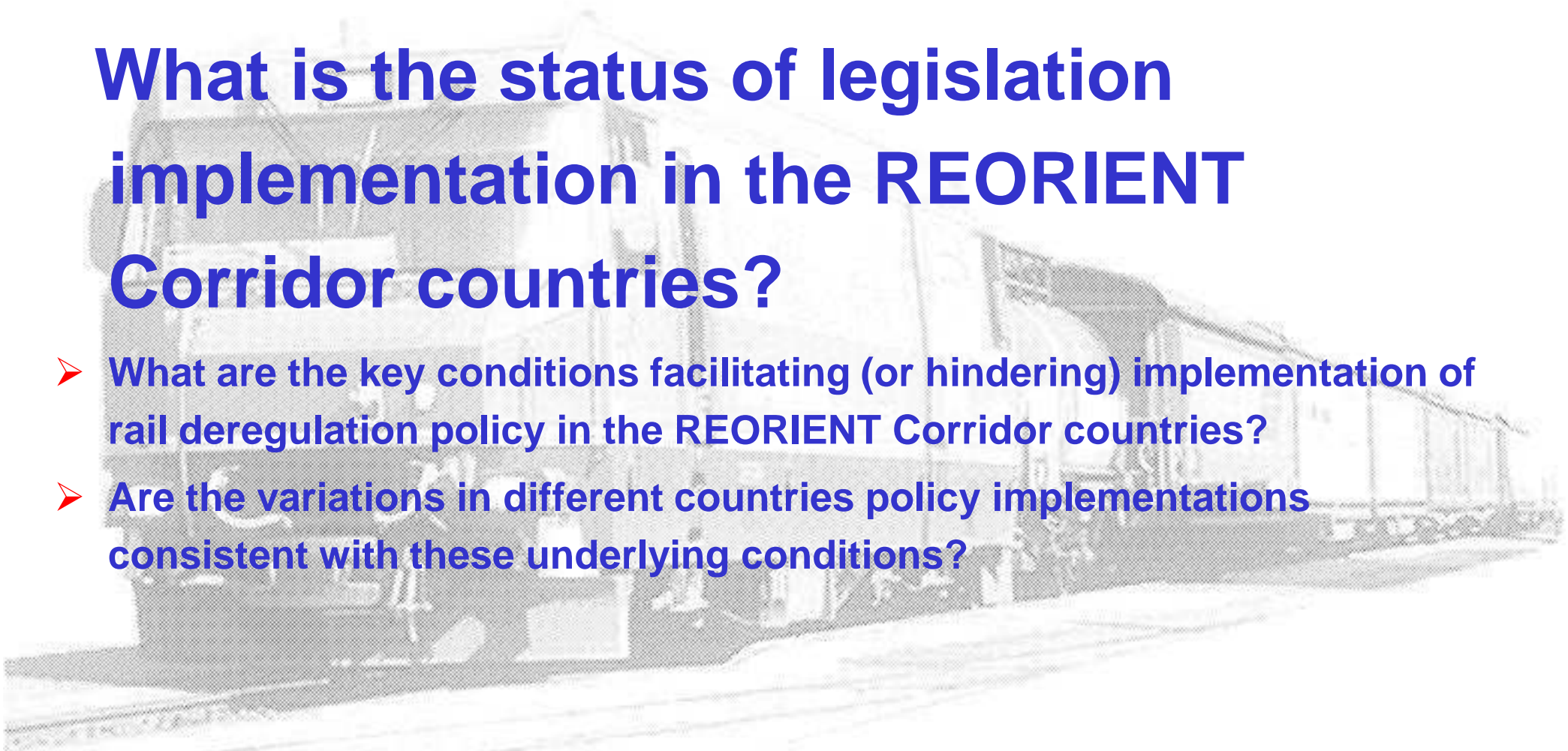


Main Findings from Legislation Implementation Study



What is the status of legislation implementation in the REORIENT Corridor countries?

- What are the key conditions facilitating (or hindering) implementation of rail deregulation policy in the REORIENT Corridor countries?
- Are the variations in different countries policy implementations consistent with these underlying conditions?

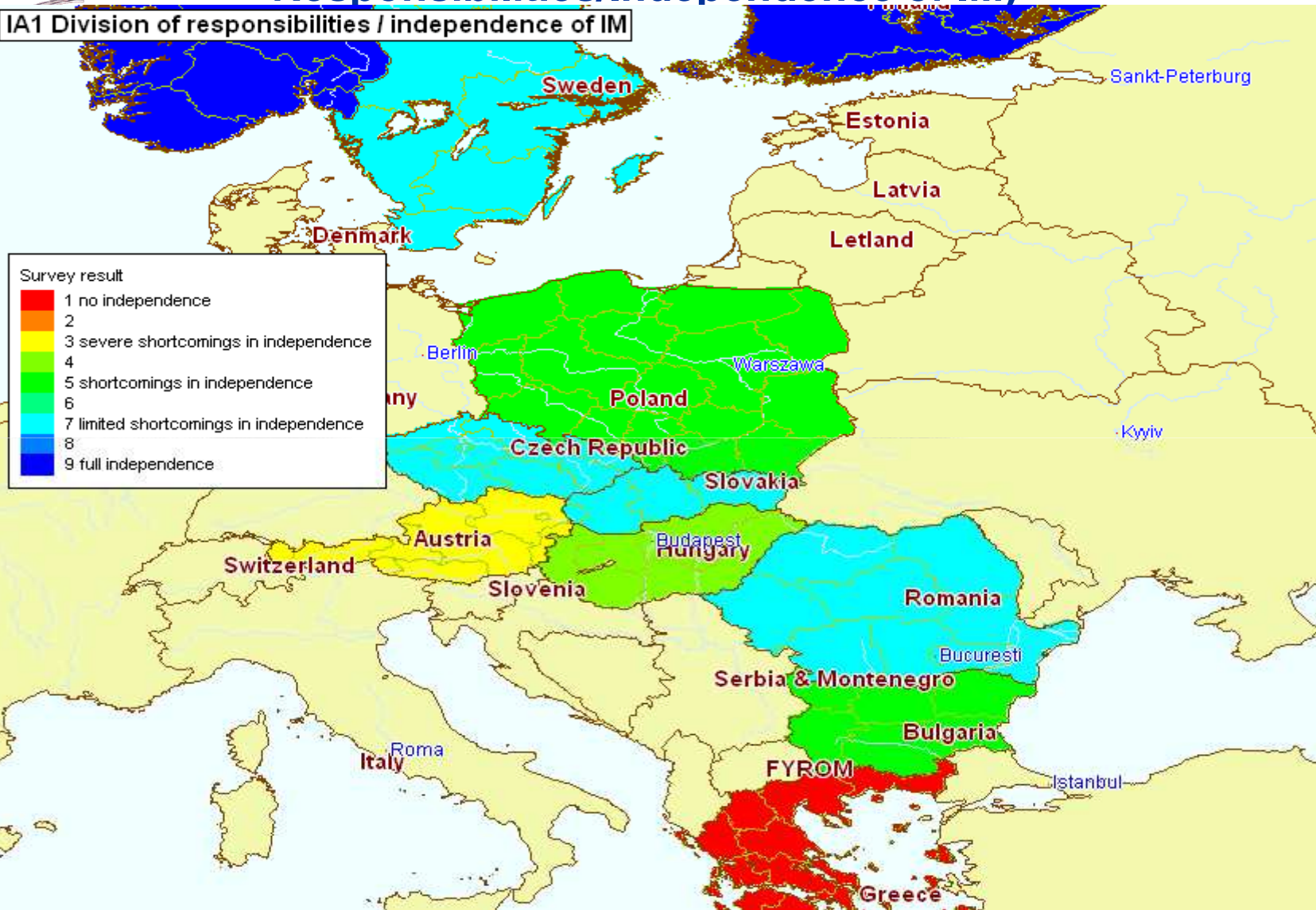




Scores on RA IA1 (Division of Responsibilities/Independence of IM)

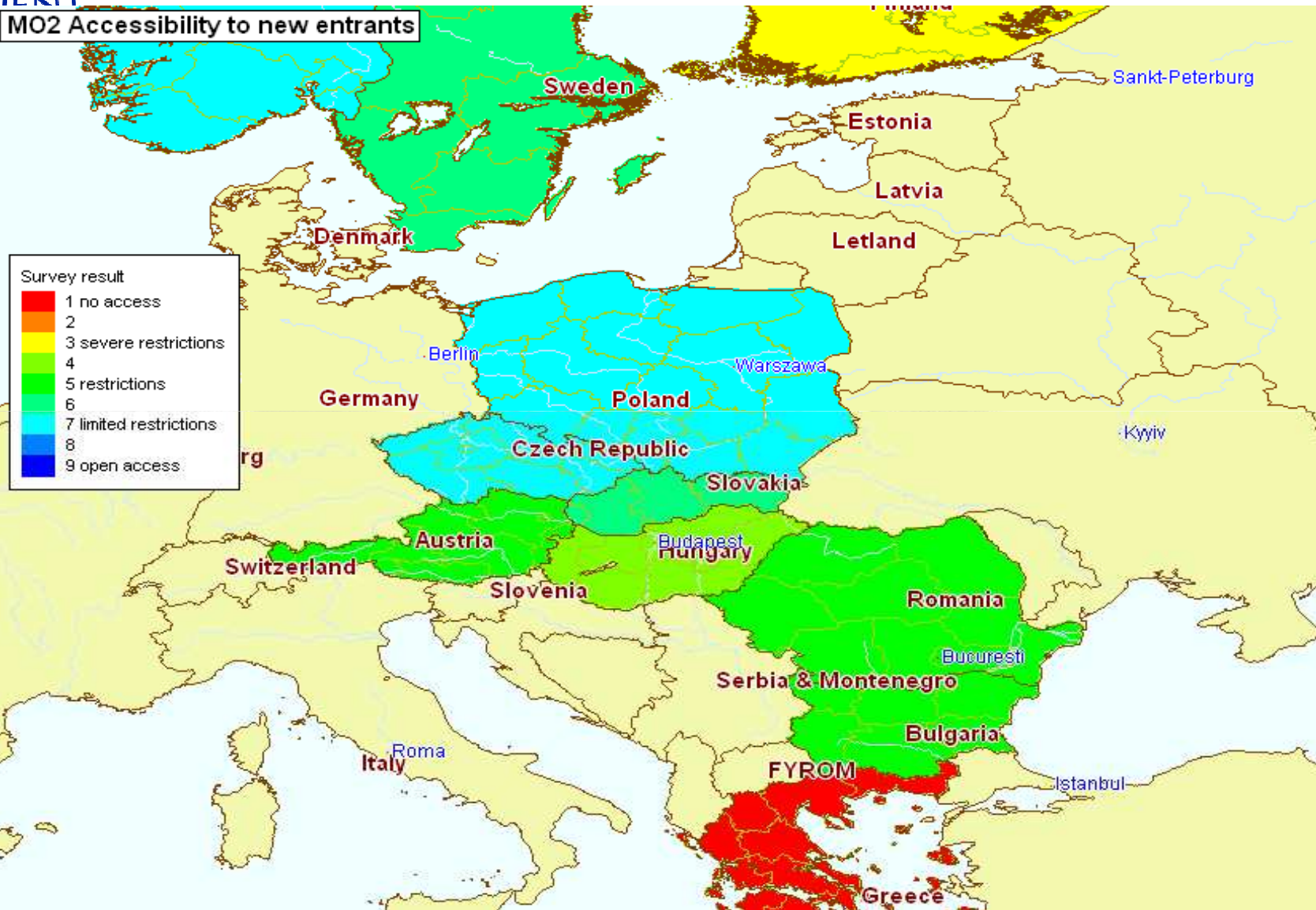
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IA1 Division of responsibilities / independence of IM

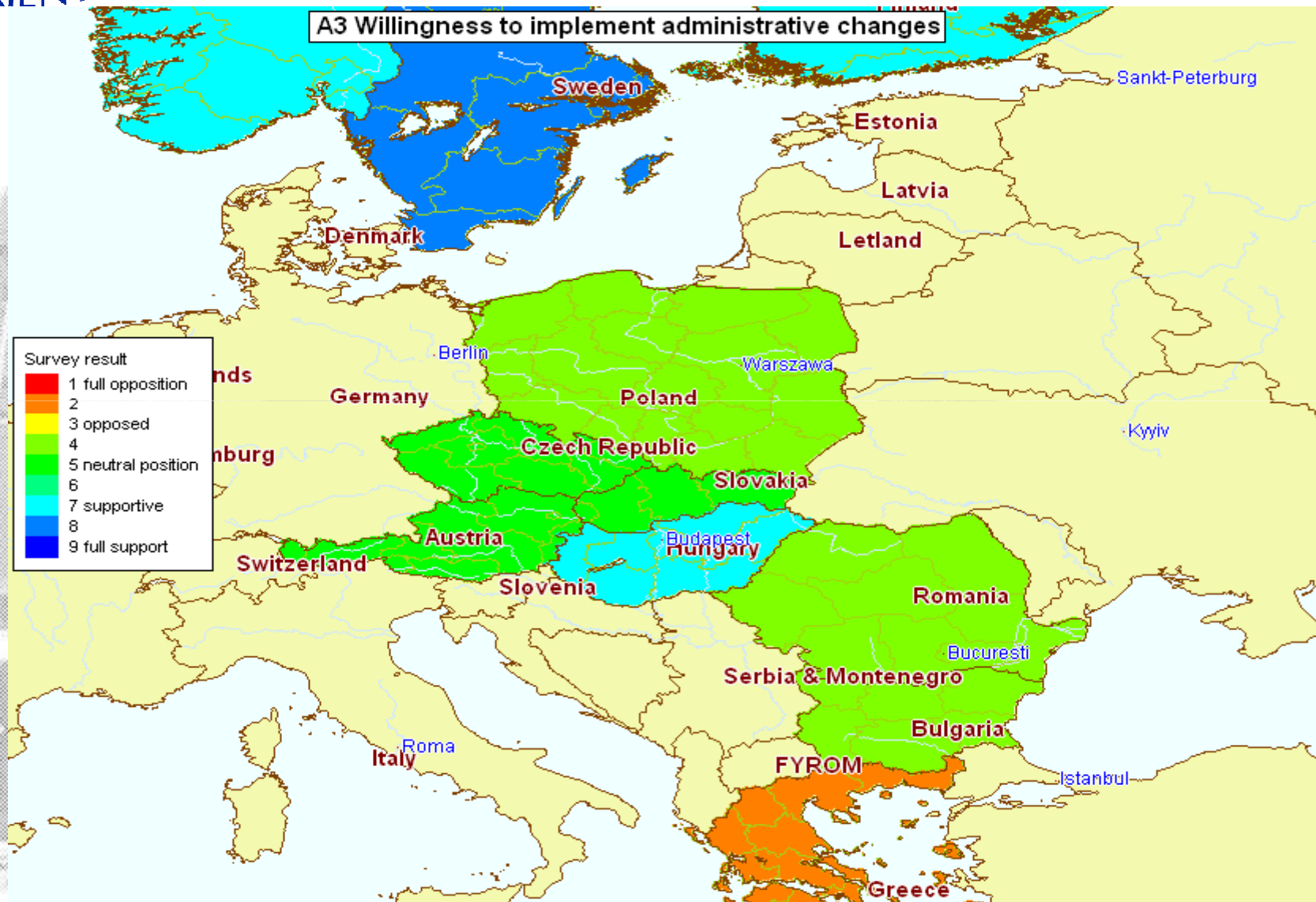


Scores on RA MO2 (Accessibility to New Entrants)

MO2 Accessibility to new entrants

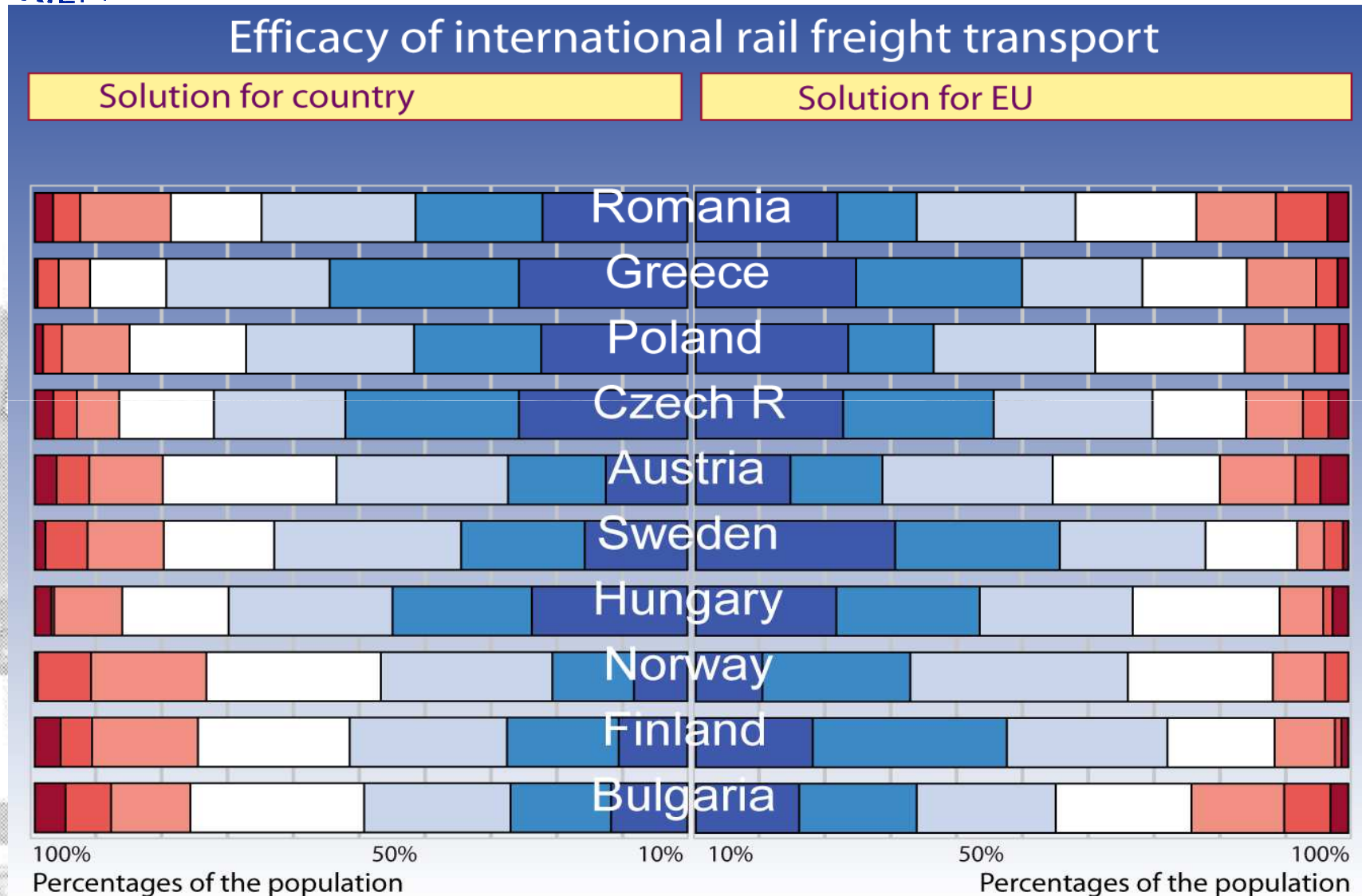


Scores on IC A3 (NRR Willingness to Implement Admin. Changes)





Ability of rail freight to solve pollution, accidents, noise and congestion problems





Main Findings from Market Analyses



Market-related Major Research Subjects

- 1. Demand Analyses for Rail and Road-based Freight Supply Solutions in 12 European Countries**
- 2. Market Responses to EC's Rail Deregulation Policy**



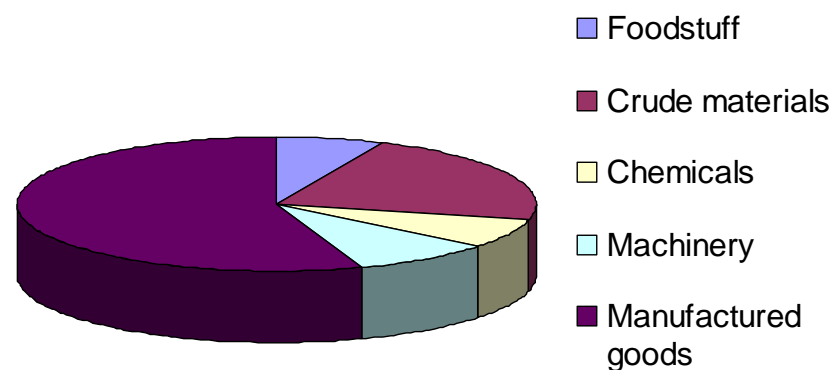


Commodities in International Transit

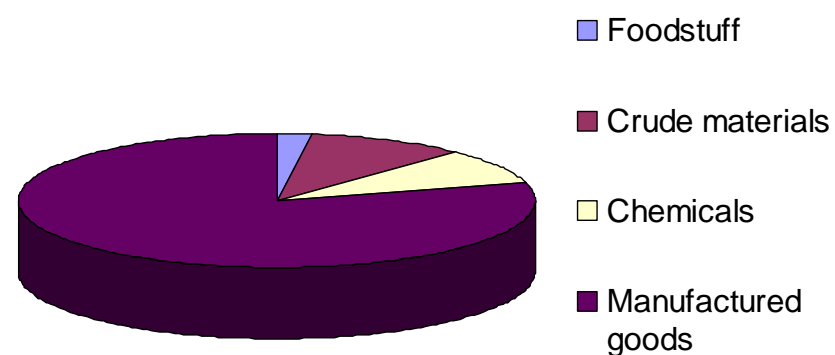


**Manufactured Goods
are the most important
commodity category in
rail international transit**

Truck Volumes



Rail Volumes

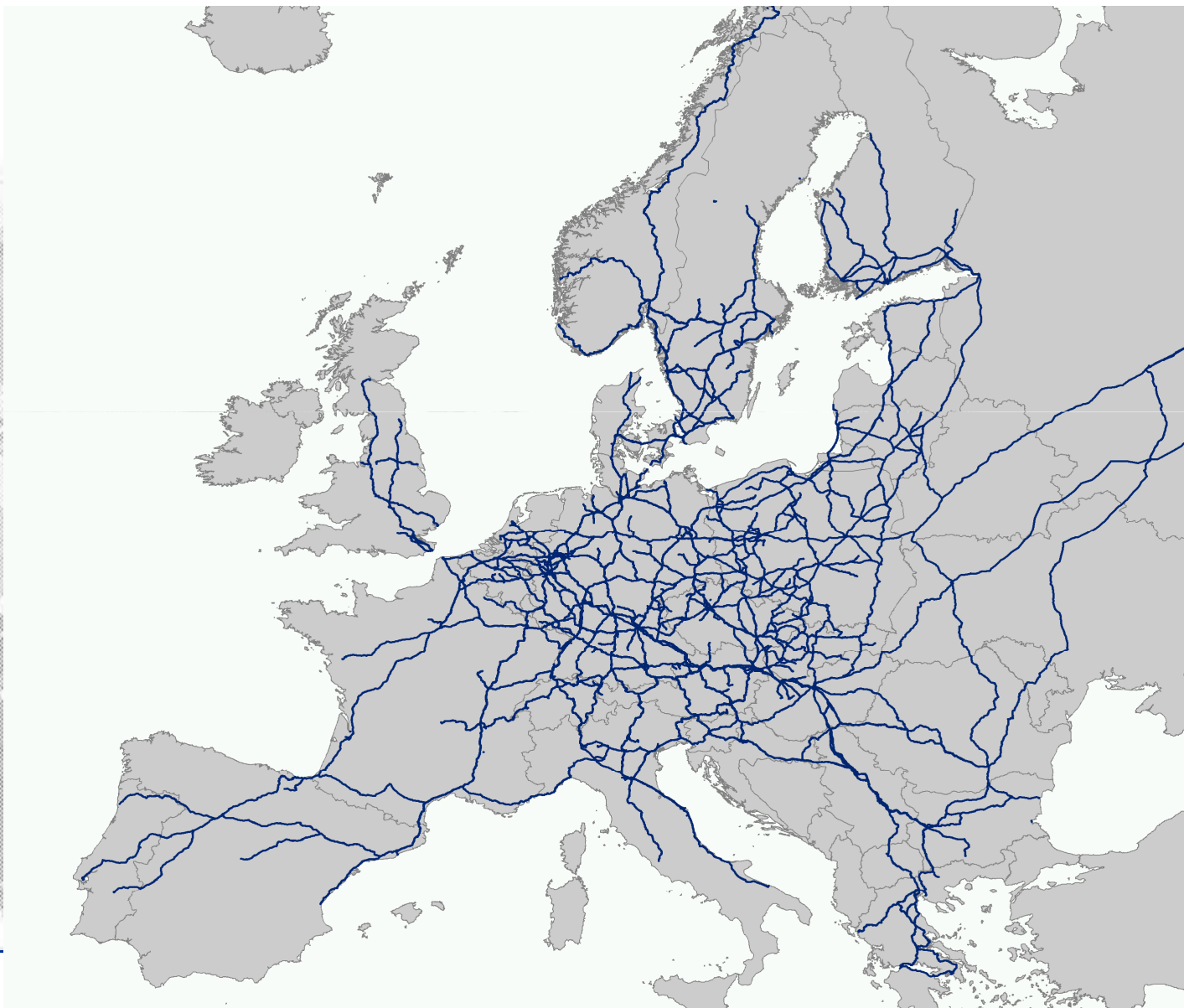


Source: REORIENT WP6.1 Survey



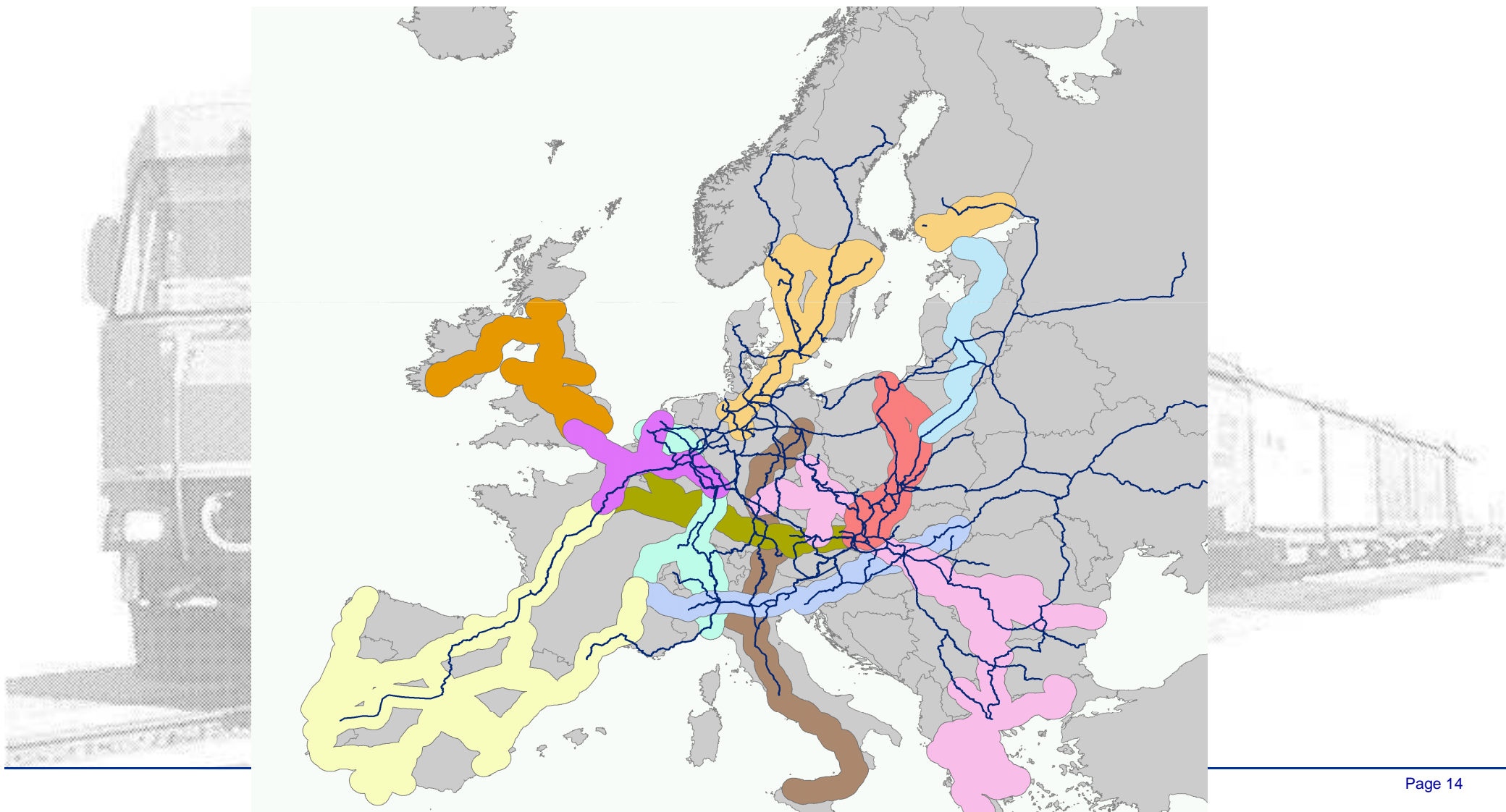
THE TRUCK ROUTES

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THE RAIL ROUTES AND TEN-T CORRIDORS





Manufactured Products



RAIL

Large shipments

TRUCK

Small shipments

Most Important Service Quality Requirements

RAIL

Service Availability at Origin

Cost

Reliability of Service

Loss and Damage

TRUCK

Reliability of Service

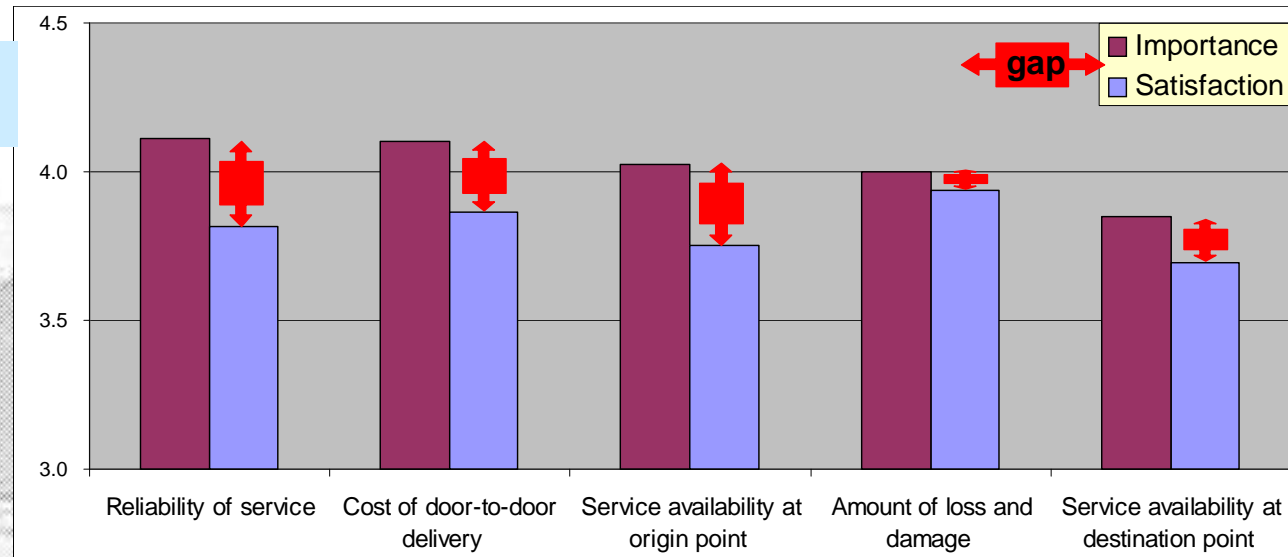
Cost

Service Availability at Origin

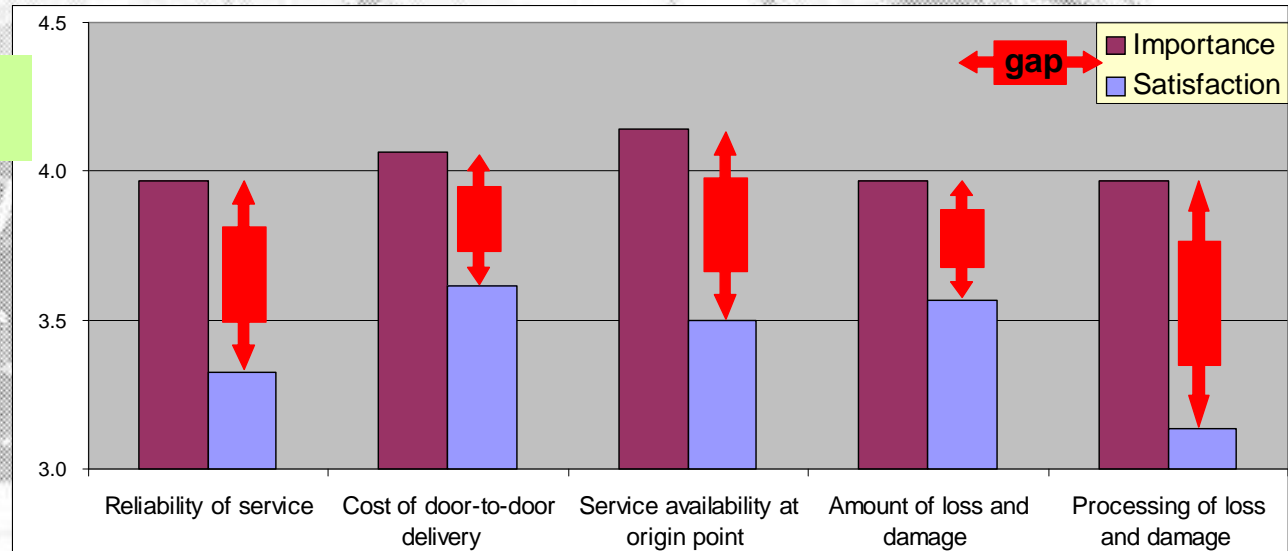
Loss and Damage

Importance-Satisfaction-Gaps in High-Importance Quality Factors

Truck Shipments



Rail Shipments





Competition in Deregulated Rail Market

No clear **relationship** between
implementation of deregulated
rail market governance and
market dynamics





Deregulated Market Governance and Competition

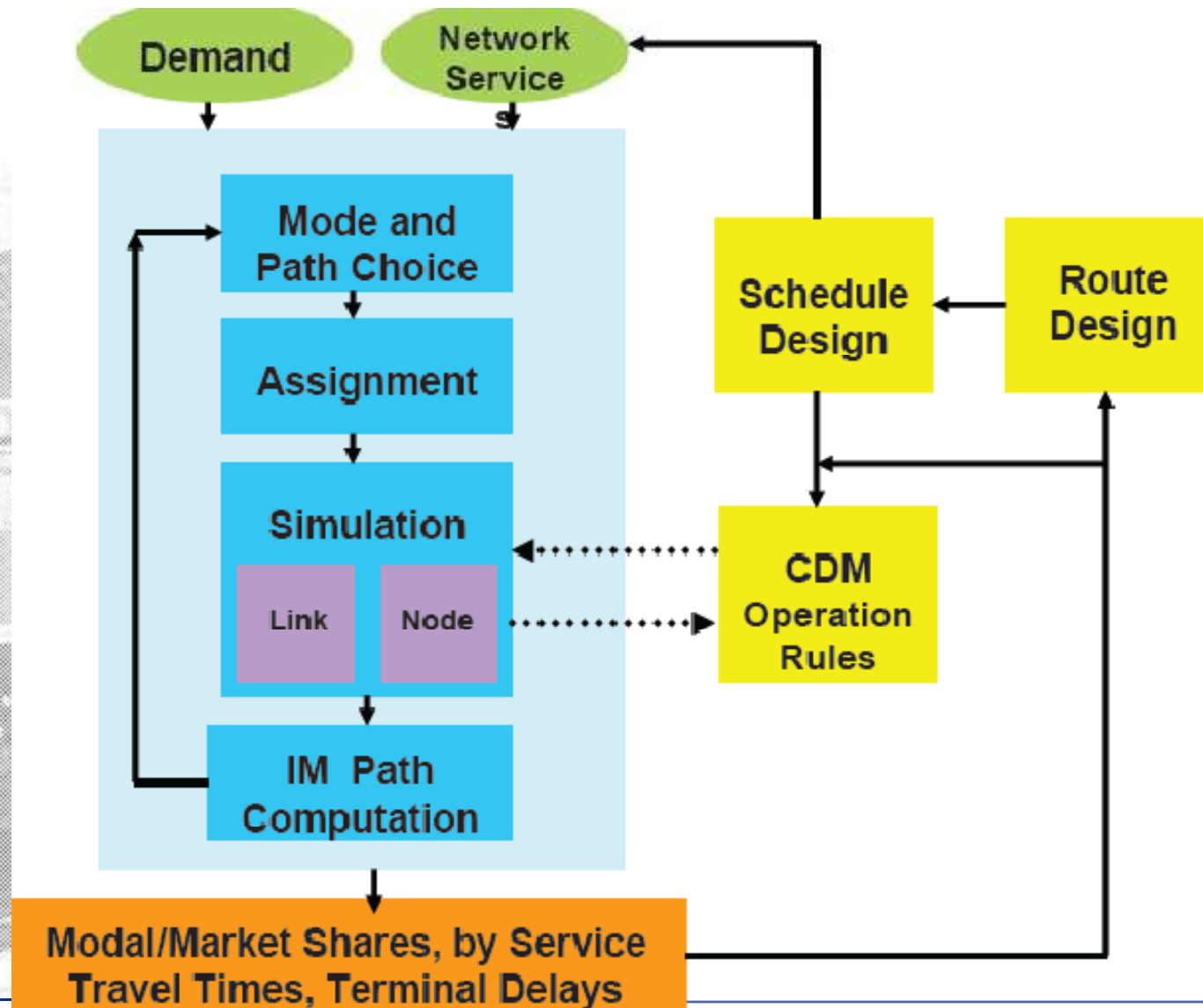


		Deregulated Market Governance	
		Complete	Incomplete
Intra-rail competition	Yes		Poland, Bulgaria, Romania,
	No	Norway, Finland, Sweden	Hungary



Intra-rail and Inter-modal Competition

		Road - rail competition	
		Yes	No
Intra-rail competition	Yes		Poland, Bulgaria, Romania,
	No	Norway, Finland, Sweden	Hungary Greece





Dynamic Intermodal Simulation-Assignment Platform



Simulation-assignment method:

- These processes are simulated to determine processing costs and times at nodes and links of intermodal routes.
- Shipments are assigned using joint mode and route choice assignment method.
- Detailed representation allows us to test various policies, such as infrastructure improvements, service frequency changes, and improvement in border crossing procedures.



Proposed Service Routes



T1 = Green (Bulk)

Swinoujscie - Vienna/Bratislava - Budapest

T2 = Yellow (Unitized)

Trelleborg-Swinoujscie-Bratislava/Vienna

T3 = Red (Unitized)

**Gdansk/Gdynia-Bratislava/Vienna-Budapest-
Beograd-Thessalonica**

T4 = Blue (Bulk and Unitized)

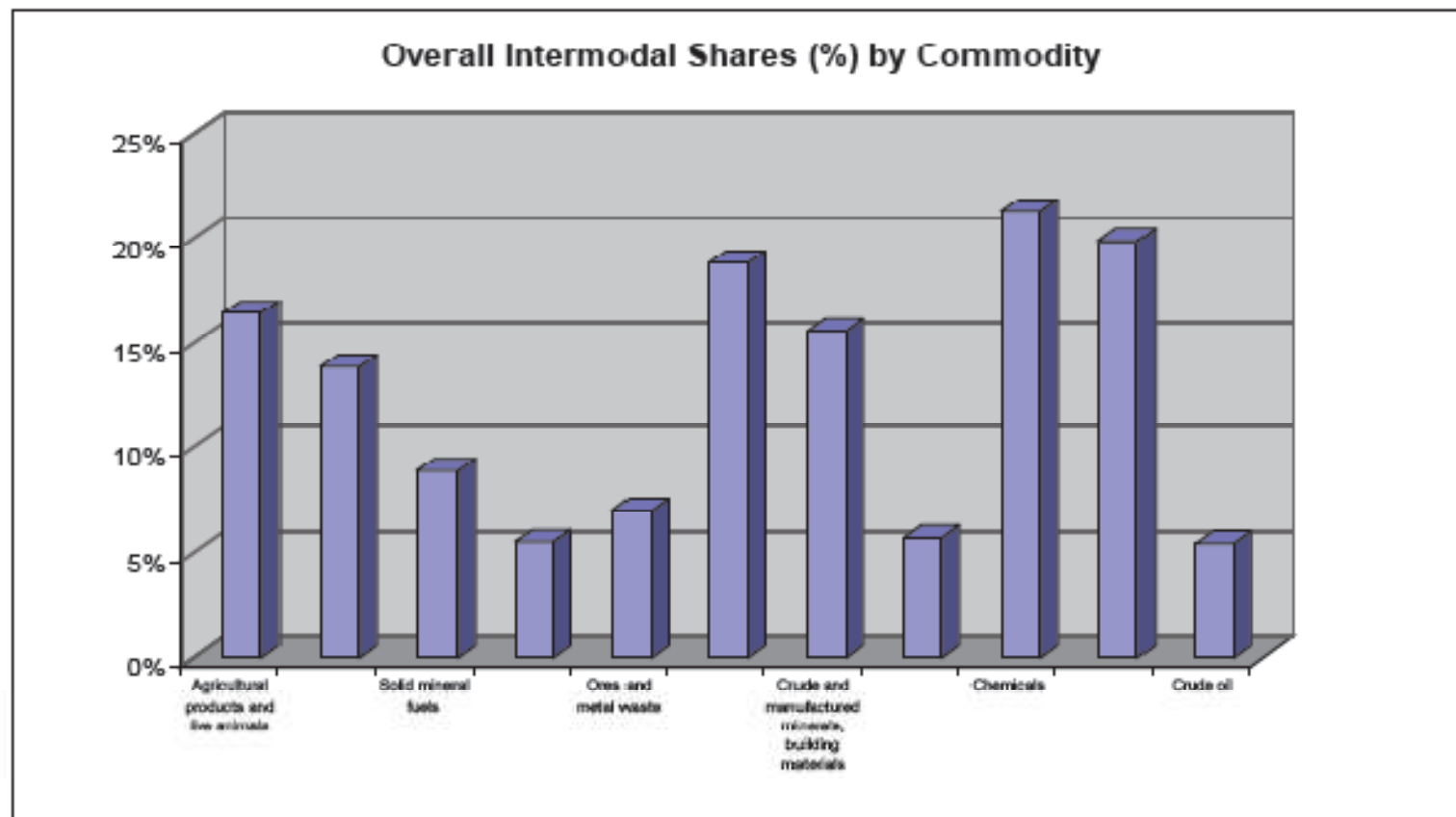
Bratislava-Budapest-Bucharest- Constantia



What Is the Current Freight Flow within REORIENT Corridor?

Weekly Flow in Tons (55,196,000)	
Road only	IM
48,318,000 (87.5%)	6,878,000 (12.5%)

Weekly Flow in Shipments (3,200,000)	
Road only	IM
2,775,000 (86.8%)	425,000 (13.2%)





Proposed Services



- **New rail services on current network**
- **New rail services on improved network**
 - **Multi-voltage locomotives**
 - **Improved signaling (e.g. ERTMS) along route from Gdansk to Thessaloniki**
 - **ICT for improved border station performance**
 - **20% increase in speeds in Poland**
 - **Electrification of all tracks on proposed services**

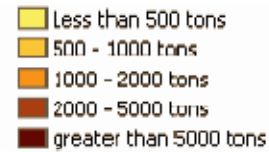




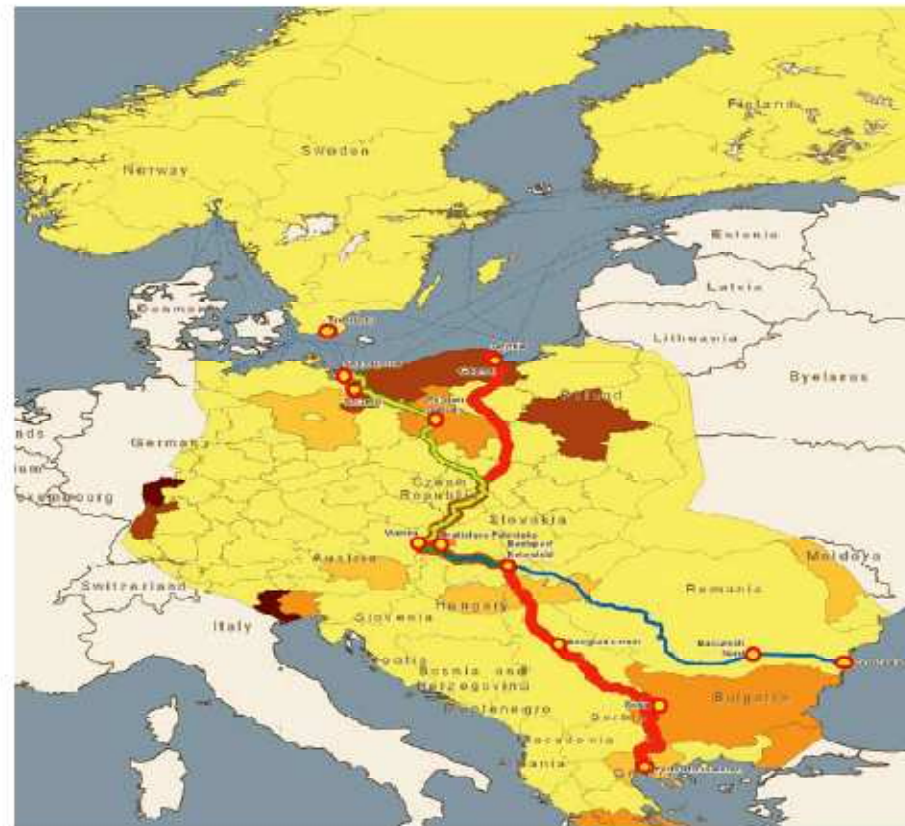
Services: Catchment Area (Origins of shipments using new services)



Scenario 2



Scenario 9

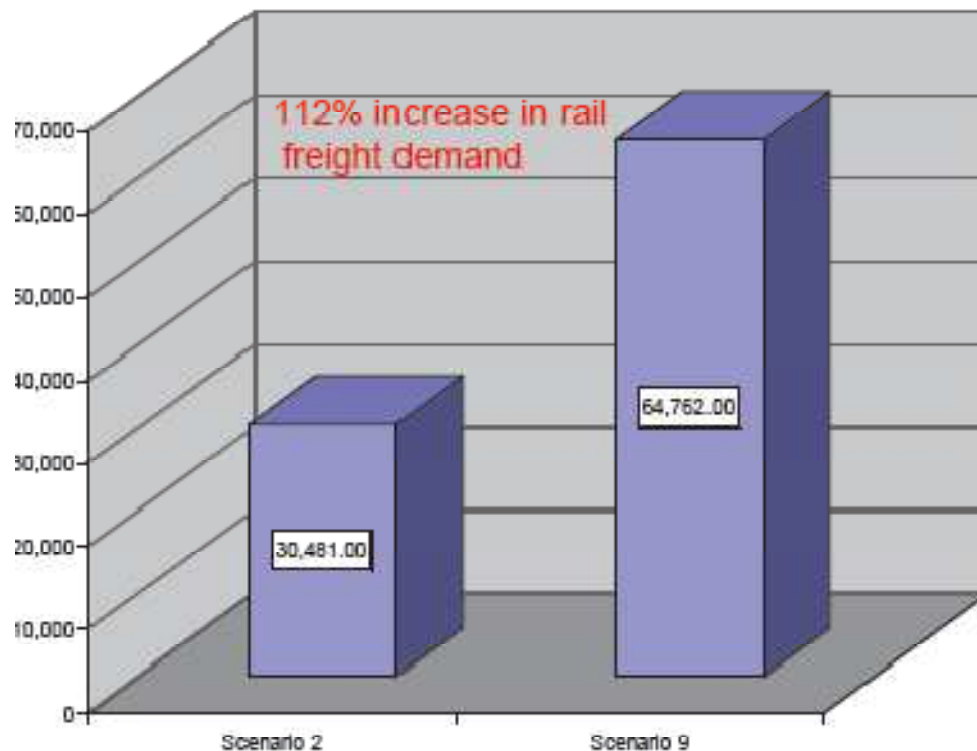




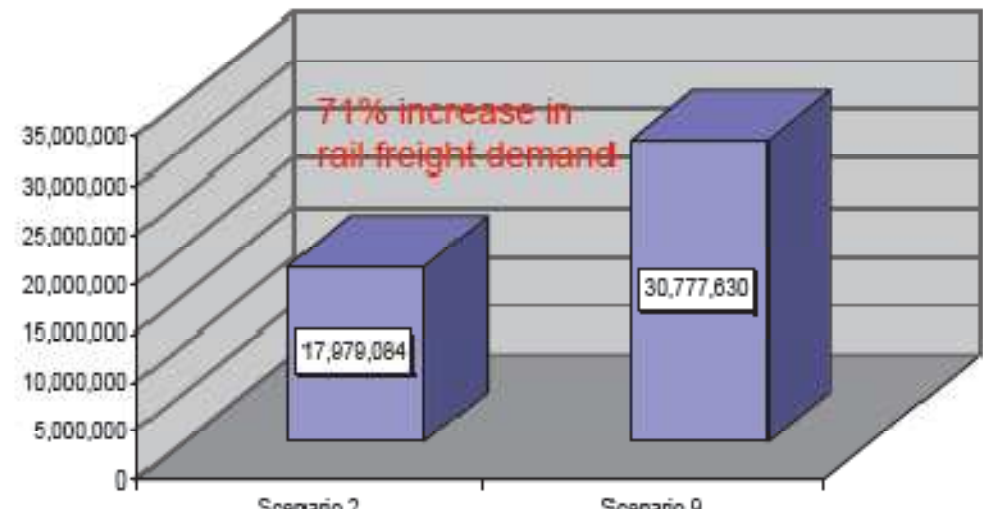
Potential Market for Proposed Rail Services



Weekly Flow in Tons on All New Services



Weekly Flow in Ton-km on All New Services

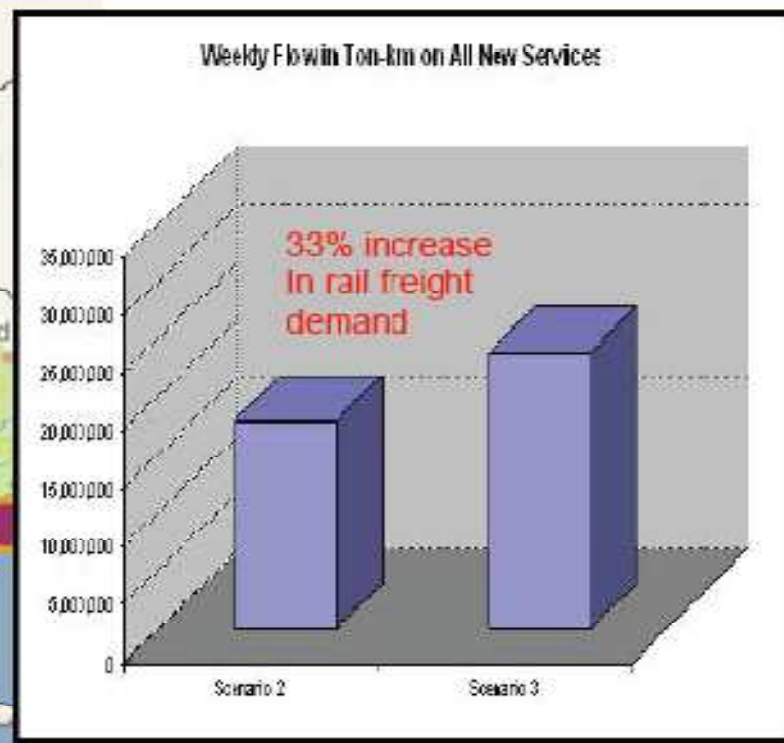




Does Greater Access Increase the Proposed Rail Services' Attractiveness?



Level of loading points	Loading points
Minima	Harbors (including Thessaloniki), Vienna, Bratislava, Budapest, Beograd
Greater access	Additional loading points - Sofia, Bucuresti, and Poznan

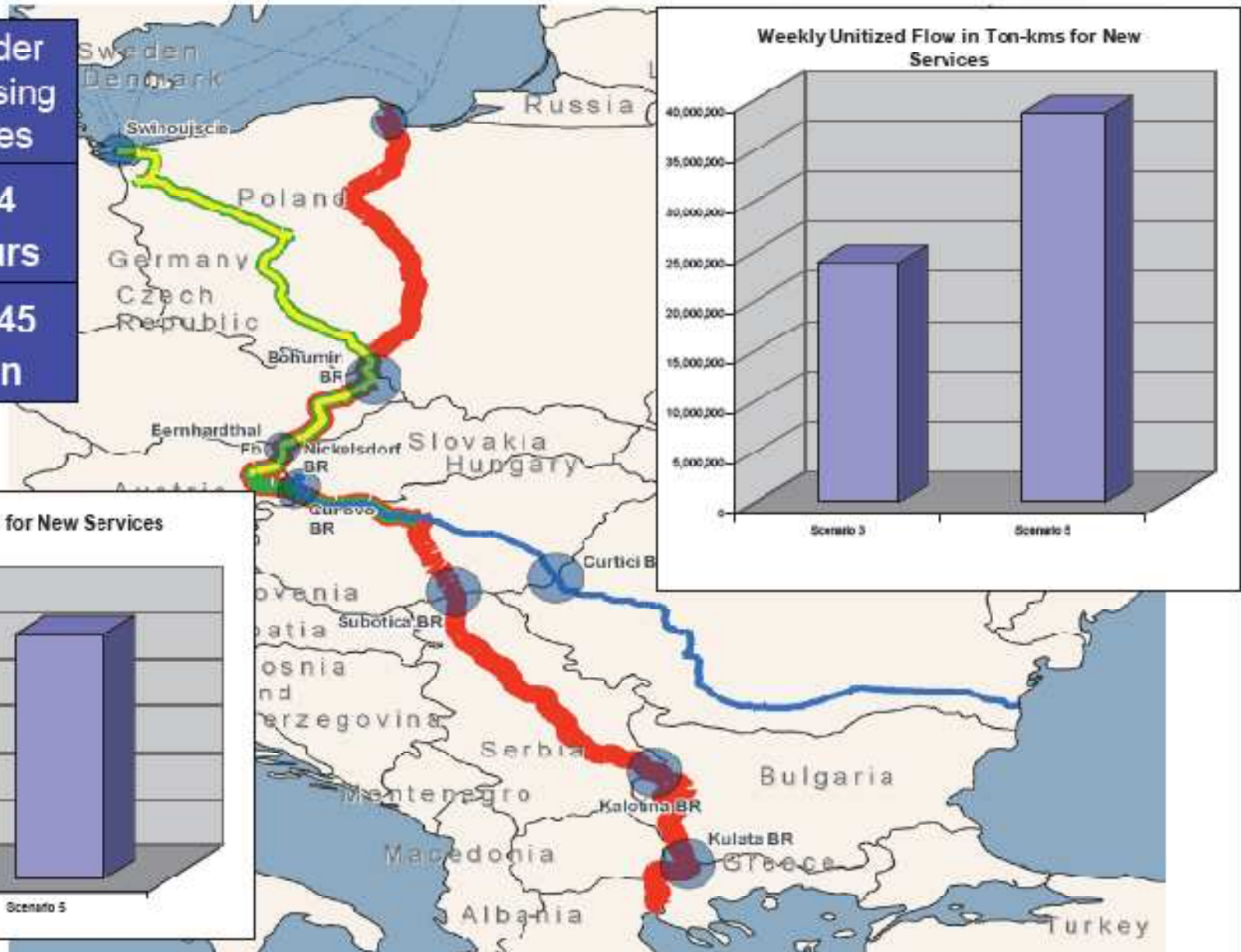




Do Border Crossing Delays Hinder Rail Utilization?



Scenario	Border crossing times
Conservative	3-4 hours
Sophisticated	15-45 min

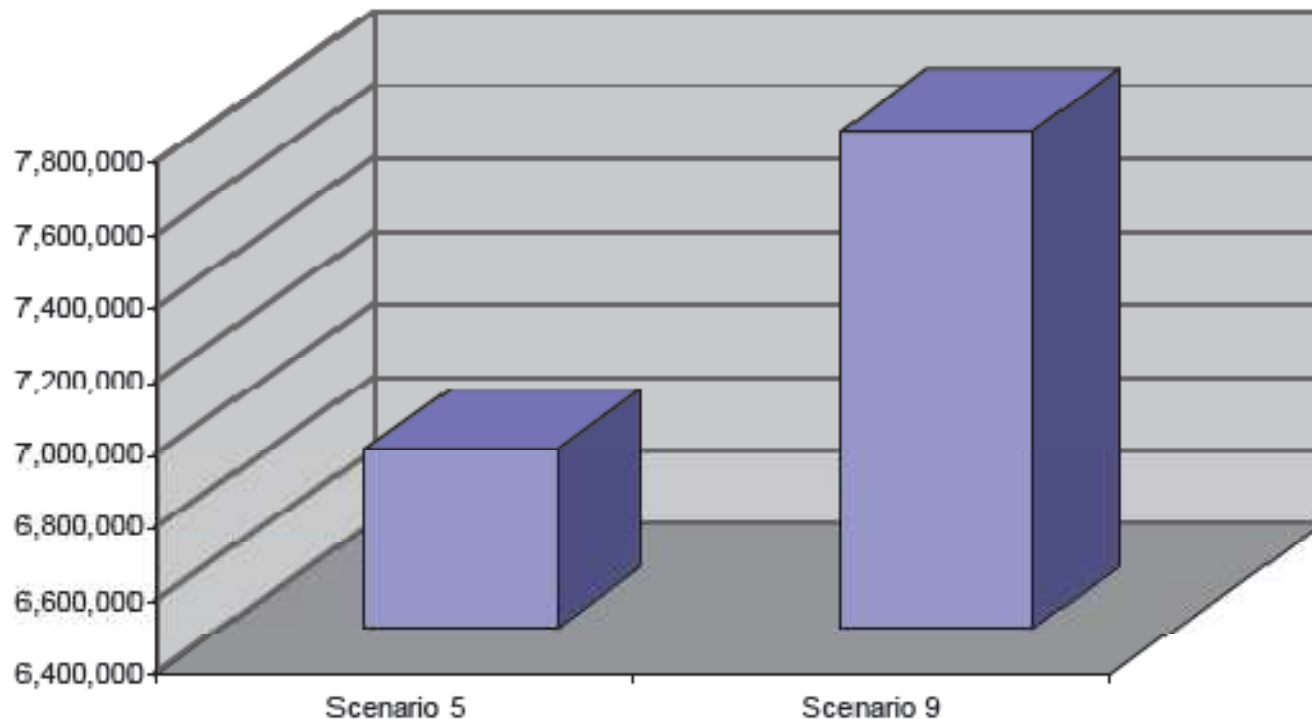




Infrastructure Improvements



**Weekly Flow in Tons in Overall
REORIENT Network**



Improved signaling

20% increase in
speed in Poland

Electrification of all
track along
proposed service

Terminal processing
time improvement

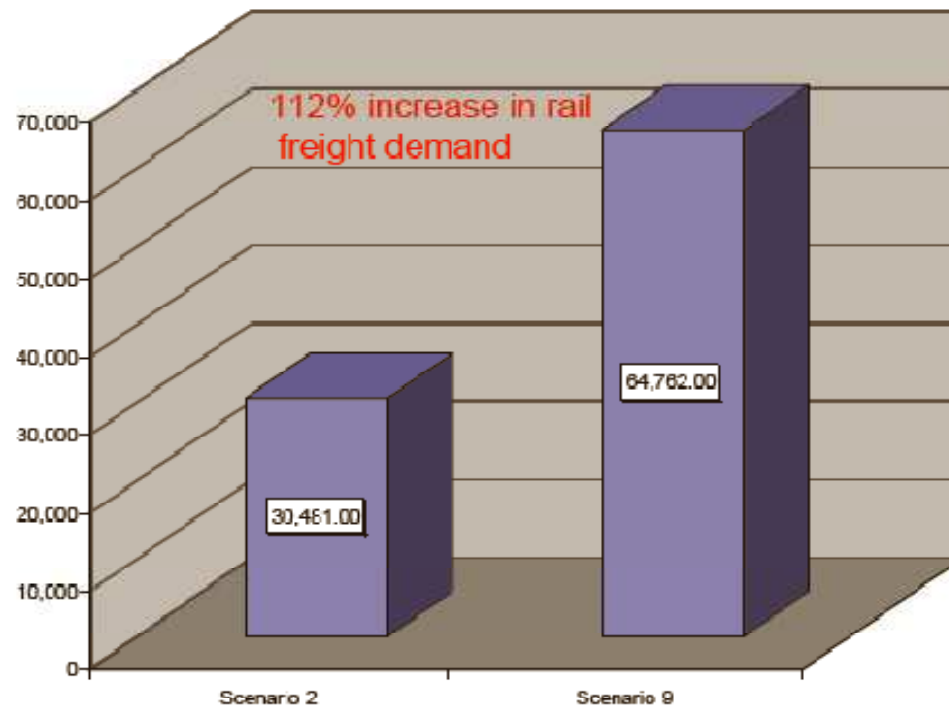
**12.8 % increase in intermodal rail freight flows
in overall REORIENT network**



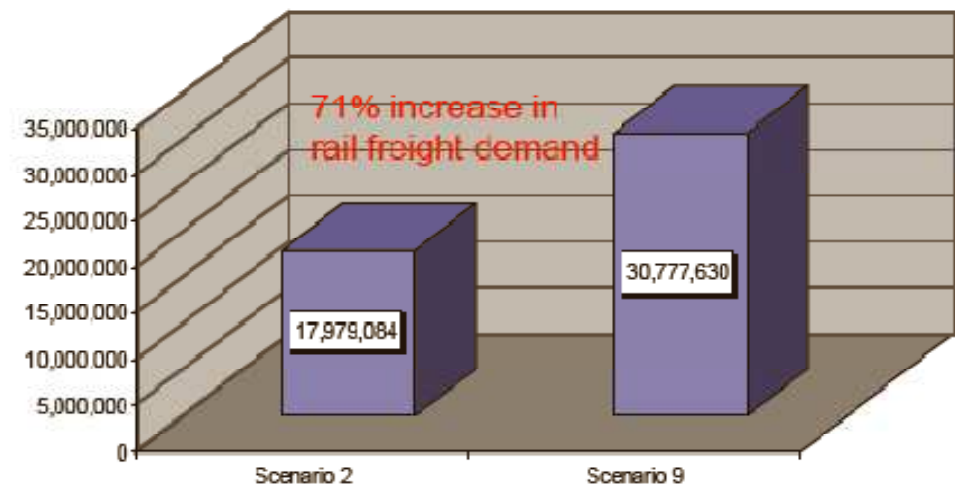
Potential Market for Proposed Rail Services



Weekly Flow in Tons on All New Services

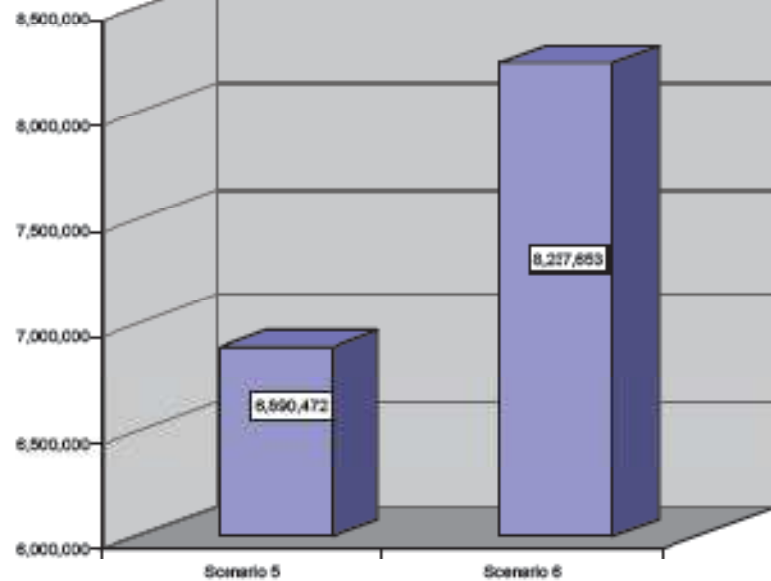


Weekly Flow in Ton-km on All New Services



Relaxing Time of Day Scheduling and Priority Constraints

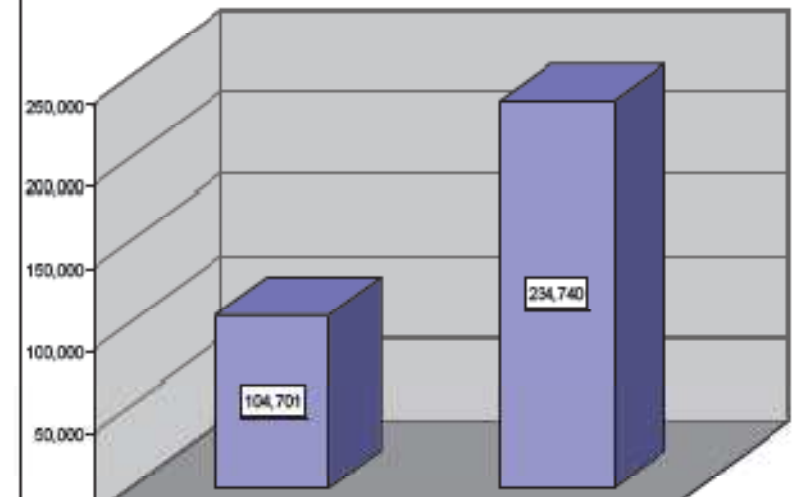
**Total Weekly Intermodal Flow in
Tons over Entire Network**



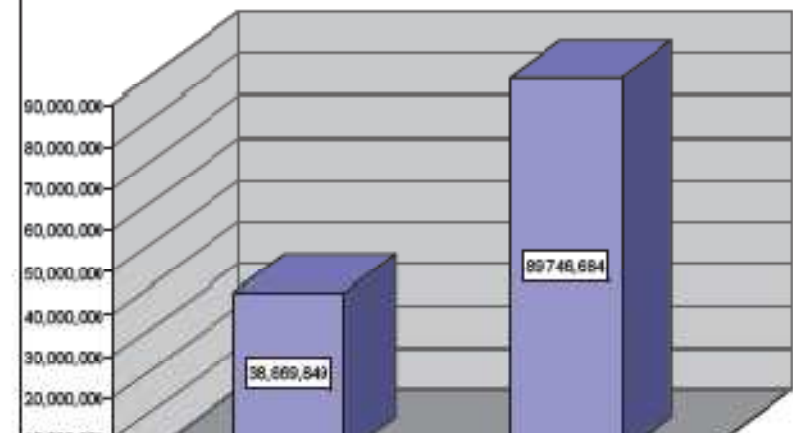
Approximately 20% increase in
intermodal rail freight in overall
REORIENT network

Better than doubling of demand for

**Weekly Unitized Flow in Tons on All New
Services**



**Weekly Unitized Flow in Ton-kms on All
New Services**





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Thank you for your attention

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