

PORT-NET
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THE ROAD AND RAIL FREIGHT TRANSPORT IN THE CO-MODAL APPROACH



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Introduction

- The Centre for Transport and Logistics (CTL) of the University of Rome La Sapienza, www.ctl.uniroma1.it
 - Centre of excellence founded by MIUR in 2003, directed by Prof. Francesco Filippi
 - Research on transport systems and logistics and practical applications for government and industry
 - National and international partnerships
- Among the current activities
 - ICT applications for the transport industry
 - The EU FREIGHTWISE project (FP6)

Objectives

3

- To illustrate some of the current practicable improvements in terms of efficiency to road and rail freight transport.
- To analyse how these improvements can contribute to co-modality.

Background issues

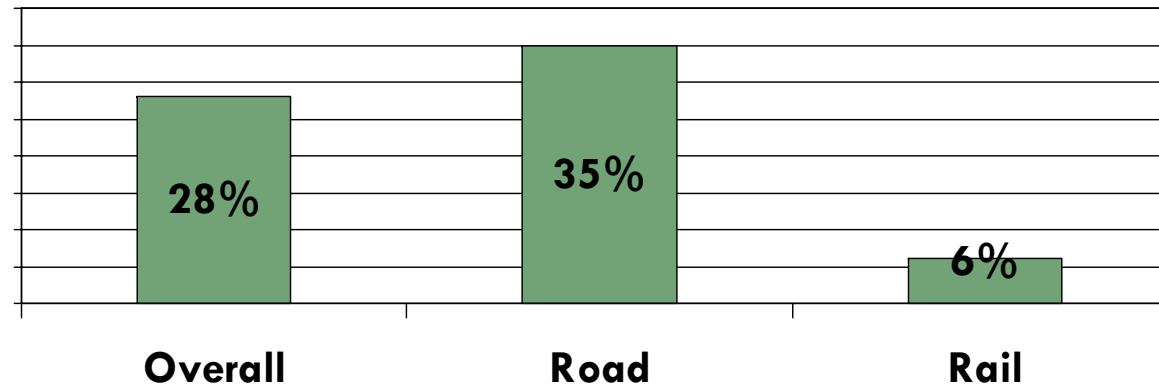
4

EU confirms its main objective to provide Europeans with efficient, effective transportation systems that

- ▣ offer a high level of mobility to people and goods throughout the Union;
- ▣ are environmental friendly, and ensure energy security;
- ▣ increase the efficiency and sustainability of the growing transport sector.

Trends in freight transport 1995-2004

5



To face the impacts of transport growth

- ▣ Use of technology to make transport sustainable
- ▣ Modal shift to more environmentally friendly modes
- ▣ Optimise each mode and the use in combination (co-modality)

Road freight transport improvements

6

- A key strategic element to improve the road freight transport efficiency may be the increase of truck size and weight (TS&W).
- US TS&W projects demonstrated that:
 - Increased payloads and fewer truck trips lower transport costs significantly.
 - Additional axles and fewer truck trips result in less pavement wear.
 - Technology can improve safety of trucks.

European experience on TS&W

7

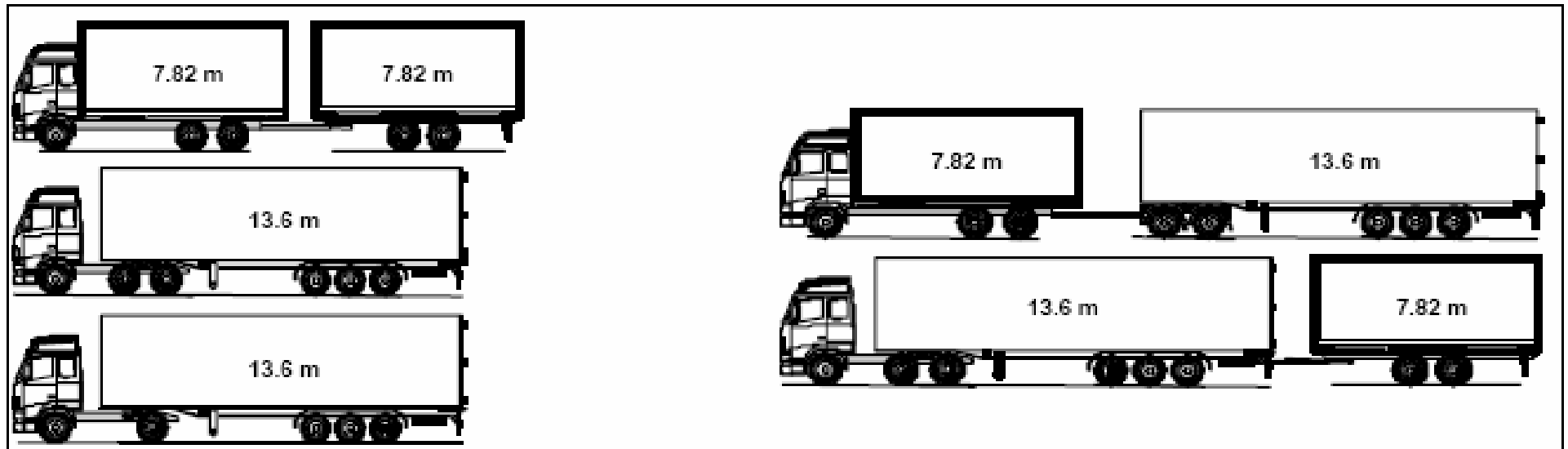
- UK Department of Transport, McKinnon (2005)
 - Consolidation of loads, reduction of vehicle movements, economic and environmental benefits, particularly for dense products.
- Sweden, Finland (2006)
 - The use of 25.25m combination (60t) would decrease EU emissions by some 15-20%.
- The Netherlands (2006)
 - Study on 20,25m – 60t showed reduction of congestion, of fuel consumption, of total cost; no problems with logistics planning.

Example: Longer and Heavier Vehicles (LHV)

8

EU Directive 96/53/EC System
13.6m 40t

European Module System (Volvo)
Adopted in Sweden, Finland



Fits with 20-foot and 40-foot ISO
containers

Rail freight transport improvement

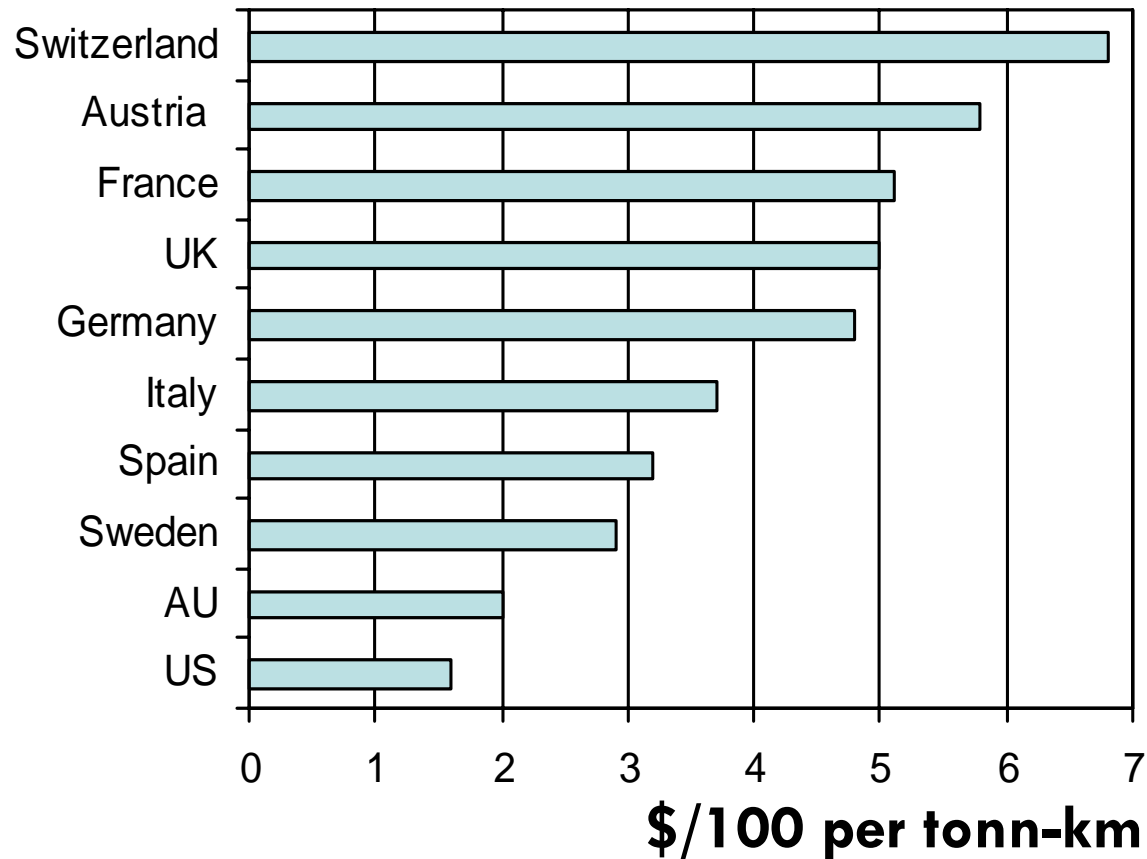
9

- Positive trends in productivity increase and in a more efficient use of transport capacity, can be supported by
 - Tariffs reduction
 - Reliability of delivery times improvement
 - Availability of cars improvements
 - Ad-hoc infrastructure investments
- Current practicable improvements
 - Reduction of tariffs
 - Use of technology

Tariffs can be reduced

10

Railway tariffs in some OECD countries



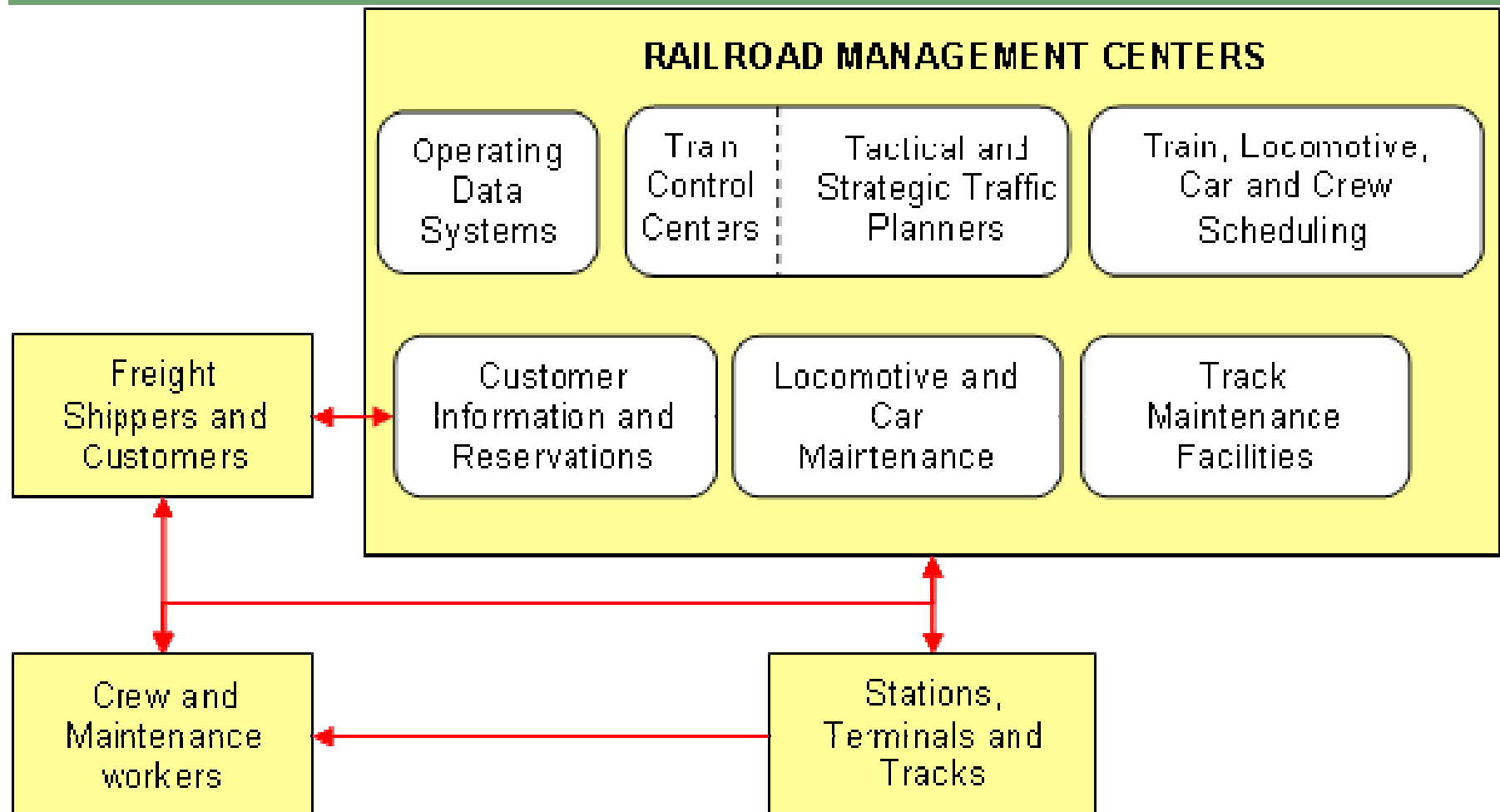
Technology can help the rail system

11

- Train operation, traction and rolling stocks
 - ▣ Increase of the transport capacity (load per axle) can increase the productivity
 - ▣ Increase of the length of trains can reduce frequencies of increase capacity
- Train control and ICT applications
 - ▣ Improve rail safety and security
 - ▣ Increase capacity, productivity, quality of service
 - ▣ Performance indicators measurement and cost control
 - ▣ Reduction of consumptions

Example: Advanced Train Control System

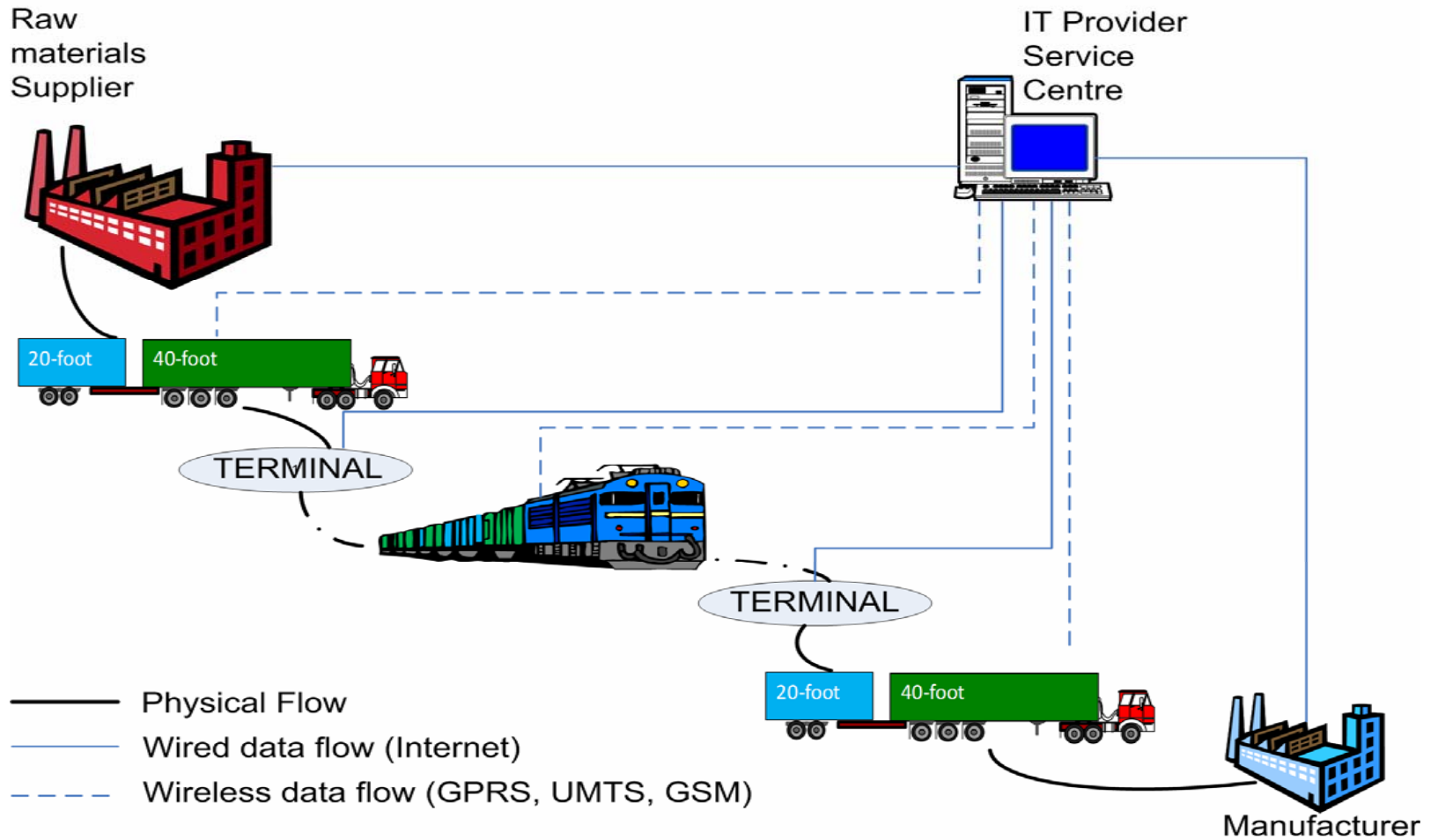
12



Co-modal approach

13

- A greater capacity in road and rail freight transport reduces overall costs, can increase transport safety and reduce the environmental impact.
- The use of LHVs can benefit the modal shift from road to rail, allowing to carry 20 and 40-foot ISO containers, which are commonly used in rail transport.
- The use of IT is a key element for achieving co-modality, by improving performances of trucks and trains.



14

Possible co-modal scenario

Long distance and for dense products
 Feasibility study in the Freighwise project Case J

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15

Thank you for your attention!

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