BRAIN-TRAINS

BRAIN-TRansversal Assessment of Intermodal New Strategies

DURATION
1/12/2013 - 28/02/2018

BUDGET
780.690 €

PROJECT DESCRIPTION

Context

Transport is critical for Europe's economic competitiveness and commercial exchange. In contrast to this, the dominant freight transport mode by far is road transport. The issue is how to increase the rail market share significantly.

In this project we study the transition towards more intermodal freight transport, both in terms of needed operational policy changes, changes in regulation and changes in governance, and taking into account social and environmental challenges. BRAIN-TRAINS deals with rail freight intermodality, and the extent to which it can be made successful, under market, society and policy-making challenges, and analyzing how intermodality contributes to answering these challenges.

Objectives

The research proposal aims at building on existing knowledge, integrating, and approaching the problem from an interdisciplinary perspective. It tackles five issues which both scientifically, for the sector and for policy-makers are still unresolved.

Methodology

The research starts by analyzing the current status of intermodality, including success factors and barriers. Main inputs to that are scientific and sector literature, and time series on the use of intermodal transport. Equally, the proposal assesses the major future related initiatives and challenges. The consortium members do so for each of their strengths and competences, so that a more complete picture of future development is achieved. Both the success factors/barriers and initiatives/challenges inputs are used to build scenarios of future market, policy and intra-sector rail freight transport development.

Barriers and success factors will be classified in categories which will be handled in WP 2-6, as either technical-operational (for WP2 models), market-economic (for WP3 models), environmental (policy) (for WP4 models), regulatory (for WP5 models) and public administration and governance-related (for WP6 models).

Subsequently, five work packages will model and quantify outcomes and impacts for each of the scenarios. A first quantification track involves simulating the optimal setup of national and international intermodal rail freight corridors, taking into account government roles and incentives. Use is made in that analysis of cost functions that deal simultaneously with the modes of transport as such, but also with transfer points. As part of the analysis, cost differences between the different intermodal solutions and also a comparison with road-only solutions are calculated.

Second, the macro-economic track estimates the impact on the national economy that establishing optimized intermodal rail transport can have, through job creation, value added, tax income, etc. The impact will be tested for each scenario, since depending on the setup, the type of actors involved may be different, and the impact on the economy may be larger or smaller. A more advanced type of input-output analysis will be applied. A distinction is made between direct and indirect effects.

Third, it is tested how each of the scenarios contributes to environmental and social sustainability. To do that, a Life Cycle Approach will be used. For each of the scenarios, the scope of the life cycle will need to be determined, and the impacts will be quantified. Environmental impacts are crucial in the analysis, as transport remains one of the big sources of air pollution, and the improvement targets that among other the European Commission imposes are drastic.

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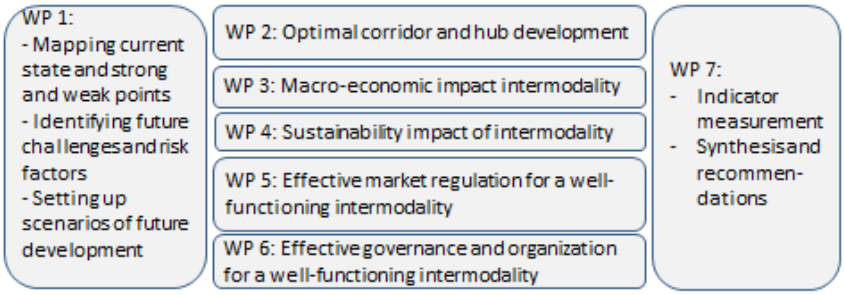
Fourth, the need for and options of regulation are assessed. Regulation can be crucial, especially as the rail market turns more and more into an oligopolistic or even near-monopolistic one, at least for certain product types. Allocating the available capacity in an equitable way is important for the price and service offered to the users. The level of economies of scale, the optimal number of operators, and the required type and level of regulation will be analysed for each scenario.

Finally, the fifth track models how public administration and policy making should be organized and coordinated to optimally implement intermodality under each of the future development scenario. A transition problem requires good interaction and co-ordination between the relevant ministries and departments at different levels. The aim of this track is to search for the optimal level of interaction for different contexts and environments.

Figure 1: BRAIN-TRAINS research approach



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