

iv2splus INFONET

Gütermobilität, MdZ 1. Call (2012)

Smart Hubs 2.0

Optimierung multimodaler Knoten im Korridor VII (Donaukorridor)

Starting point:

Seamless transportation is both a strategic objective and key factor in modern logistics when it comes to highly networked, reliable and speedy as well as resource efficient freight transport. Clearly, multimodal nodes play an eminent role in that. Within multimodal nodes various players meet, eager to optimise their individual business and organisational processes for successful operations. Trade-offs are inherent parts of the system, because the overall logic in transport systems is disregarded. Hence, even a technically optimal operational node can be optimised from a macroeconomic perspective. This applies to environmental issues, such as pollution, land use, energy use, etc. as well as to issues of resilience to disturbances (system failures on waterways such as non-navigability due to high water) and frequently an associated lack of redundant fallback options. Further room for improvement would be geographical and spatial planning location matters with a view to node efficiency in the overall transport system and the spatial structure.

Problem:

There are currently a number of innovative organisational and technological solutions in the field of seamless transportation and logistics activities that overall address only some aspects. Hence, they lack a comprehensive and advanced analytical approach. This goes along with a corresponding deficit in strategic solutions on the organizational, technical and macroeconomic level. This challenge is illustrated on the basis of selected nodes in the Danube corridor between Duisburg and the Black Sea, where also the systems Rhine and the Rhine-Main-Danube Canal are included in the analyses.

Research approach:

The result of this preliminary study is a strategic concept that considers overall economic, politico-scientific and organisational aspects. At a later stage it is to serve implementers as a guideline to service and enhance particularly the location Austria in a frictionless/seamless manner. The concept aims to improve the effectiveness and efficiency of the overall transport system macroscopically, and on the microscopic level the resource-efficient use of existing and planned transshipment areas of freight transport. Bimodal nodes (e.g. freight distribution centres, terminals) can benefit from the results of the preliminary study as well. Not only the immediate nodes but also the system properties of the edges are analysed by way of system comparisons. The optimisation of the edges, however, is not the subject of the study. Starting by identifying and listing the contradictions, obstacles, success factors, best practice examples and presenting the influences of the system properties of the edges on the nodes, the most essential parameters are represented and simulated in a macroscopic system model.

Results:

Based on researched international experience, a new benchmarking system is developed, making the optimisation potential quantifiable and therefore measurable on the micro- and macroeconomic levels. Moreover, implementation strategies of technological and organisational solutions on 'Smart Hub 2.0', the future multimodal node, are presented. Similarly, the basis for a FSV policy (Forschungsgesellschaft Straße Schiene Verkehr / Road-Rail-Transport Research Association) at the intersection road-rail-waterway is developed, allowing the project findings to be expanded into the standardization system. Finally, this study is to help improve the education location Austria by contributing curriculum content within a - not yet existent - training focus on intermodality.

program line

Gütermobilität
MdZ 1. Call (2012)

Project coordination

TU Wien - FB Verkehrssystemplanung |
Department für Raumentwicklung,
Infrastruktur- und Umweltplanung
Univ. Prof. DI Dr. Georg Hauger

Tel.: +43-1-58801-280513

E-Mail: georg.hauger@tuwien.ac.at

Project partners

bfi Wien Fachhochschulbetriebs GmbH
Studiengang Europ. Wirtschafts- und
Unternehmensführung (EWUF) Studiengang
Bank- und Finanzwirtschaft (BAFI)
Studiengang Projektmanagement und
Informationstechnolog
Dr. Andreas Breinbauer

Tel.: +43-1-720 12 86-60

E-Mail: andreas.breinbauer@fh-vie.ac.at

TINA International
DI Rainer Müller

Tel.: +43-1-4000-84267

E-Mail: rainer.mueller@tinavienna.at

nast consulting ZT GmbH
DI. Daniel Elias

Tel.: 43-01-5234733-28

E-Mail: elias@nast.at