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Moving Forward Freight Mobility Innovations

Report from a Workshop Focusing on Sustainable Freight Solutions within the INTERREG IV B-Cooperation Area North-West-Europe

An important step in completing the European Single Market is to finalize the single rail and inland waterway transport system including first and last mile facilities and to ensure – wherever it is possible – an effective choice of transport modes for shipping companies. These are preconditions to enable modal shift and to achieve goals like environmental relief in traffic congested areas and reduction of GHG-emissions.

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The progress since the opening of the rail freight operator's market is quite impressive compared with the situation before the liberalization from 2000 on. The conditions to get operating licenses to use the rail networks are still harmonized, but not all the practical obstacles have been diminished

yet e.g. due to technical specifications. The decoupling of GDP growth rates (if effective) and increase of freight transport performance rates have not been achieved as postulated in the EU White Papers. The modal split of rail freight transport in comparison with road freight traffic in Europe is yet to be improved.

After changing the framework conditions, the implementation of modal shift measures is inevitable in order to achieve more sustainability in traffic operations within the liberalized markets. But in that respect some contradictions are more or less hidden. Modal shift towards rail and inland waterways, if available, might be desirable but cannot be achieved so easily. The freight shipping economy is interested in a variety of multimodal offers choosing the best transport alternative. National traffic regulations concerning heavy-duty vehicles become soon controversial, maybe less in the lower areas of the continent like North West Europe but more in the mountainous (alpine) regions like Switzerland and Austria.

The requirements are high, if we are aware of the fact that one part of the rail infrastructure is to some extent anachronis-

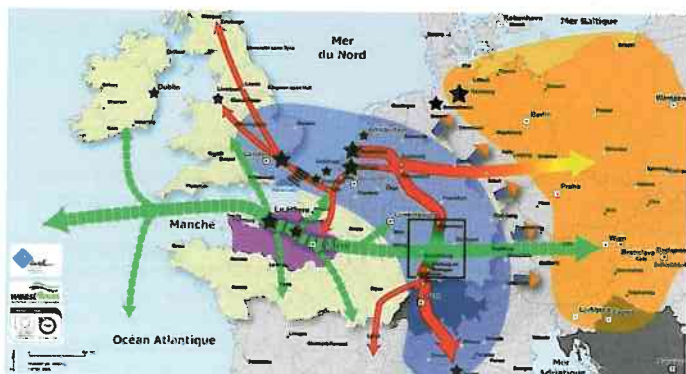


Figure 1: North-Western Europe's gateways and transcontinental relationships (source: WEAST-FLOWS)

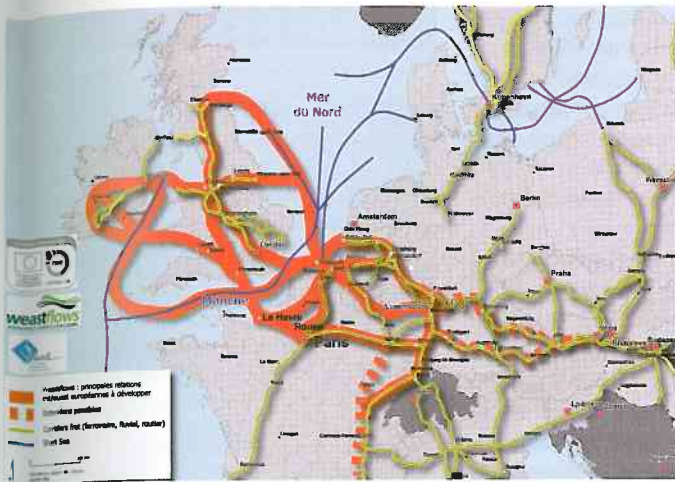


Figure 2: East-west-bound transport axis priority to develop (source: WEASTFLOWS)

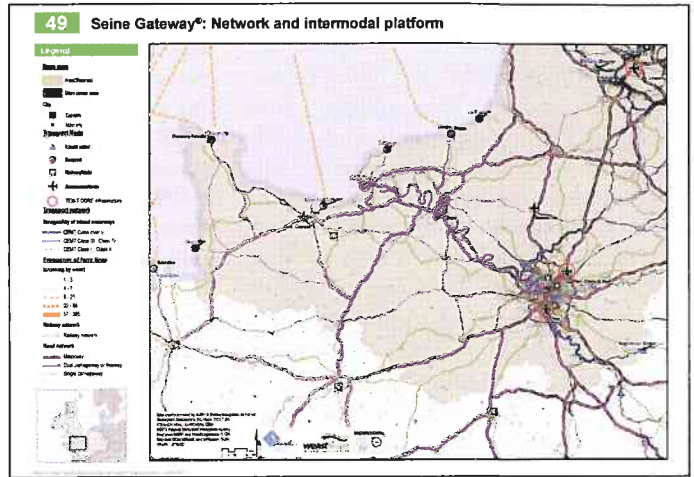


Figure 3: North-Western Europe's gateways and transcontinental relationships (source: WEASTFLOWS)

tically shaped (some of the freight main lines without electrification and modern operational management) and the other part - mainly reserved for passenger services - is equipped at high standard enabling high speed operation which often excludes slower and much heavier freight trains. The inland waterways may open up regions but they are limited with respect to lock dimensions respectively capacities and of free heights of bridges for passing modern types of barges.

The transregional and transcontinental view on freight mobility

Transregional cooperation on specific topics like freight transport is initially focused on origin and destinations of goods flows. Therefore, it is on the one hand a view on the demand side of freight transport and on the other hand a task to inquire the supply side which means qualities of transport infrastructure capacities and facilities to serve the producing and shipping economy. Within this scope, projects, like introduced in this workshop, should be positioned and interconnected if possible. In this way interested businesses as key actors in freight businesses could be addressed and involved strategically which was reflected by the variety of affiliations the 77 participants belong to. [1]

Transcontinental relationships west-eastbound and northwest-southbound both are characteristic features of goods exchange because 150 million consumers have to be supplied daily (fig. 1). Heavy industries are clustered in parts of North-West Europe which deliver their light and heavy goods throughout Europe and beyond. Imports of energy on hydrocarbon basis are as well high as of mineral and biogenic raw materials being transhipped

through maritime gateways. The density of consumption and production creates a lot of starting points for concerted actions towards sustainability combining material procurement, goods production and energy use, delivering commodities to their sale markets and recycling reusable materials for new production.

Mapping tool for better logistics planning

Several projects in the workshop addressed often less reflected fields of freight transport and commodity supply. Some of them have been reported at the joint workshop to communicate not only good practices than to show successful niches of modal shift towards sustainability of freight delivery and local environmental relief of congested road networks. The Weastflows-Project presented by Juliette Duszynski from the Town Planning Agency Le Havre & Seine Estuary Area and Laurent Vergnol from the Tudor Research Centre in Luxemburg covers the whole territory of North-West Europe. As starting point existing and projected transport infrastructures have been mapped using a GIS-Tool on two geographical levels: The entire Northwest Europe and for regional areas of interests (fig. 2, fig. 3). The analysis comprises assessments like congested or underused capacities and traffic flows between zones.

Overcoming market barriers

The offer of multimodality and the high density of rail network are distinguished features of industrial conglomerations, but not always used eagerly by producing small and medium sized enterprises and by wholesalers. Thus inducements were necessary in order to get together shipping businesses, carriers, operators, rail network pro-



Figure 4: CODE 24 like the other projects were funded under the INTERREG IVB NWE programme

viders of different scales (regional players as well as national or global acting ones) and if essential subsidizing authorities. Therefore the state government of Hesse supported the revitalization and new construction of local rail infrastructure by means of subsidies based on an inventory of rail infrastructure and an investigation of shippers' transport needs by rail [2].

In 2010, the Regionalverband Frankfurt-RheinMain joined the EU-Project "CODE 24" aiming at developing a joint transport and development strategy for the trans-European corridor Rotterdam - Genoa as Peter Endemann explained. This partly tri-modal (including the Rhine Inland Waterway System) corridor is a backbone of the so called blue banana crossing the founding states of the EU and Switzerland (fig. 1).

Embedded in the CODE 24 strategy (fig. 4), the idea of a market platform where rail freight services are offered and requested has been developed and led to a first prototype. This so-called Online Rail Freight Exchange (ORFE) widens the accessibility to rail services and brings interactively together shipping companies, forwarders, logistics service providers and rail freight operators [3].

In cooperation with CODE 24 and based on the first software prototype, two platforms have been developed and were pre-

sented at the workshop. Railcargo-online (www.railcargo-online.com) was presented by Axel Götze-Rohen and Freit-One.de (www.freit-one.de) by Martin Makait. Both tools offer a customer friendly accessibility to a detailed data base for those market participants who are willing to change or diversify their transport mode portfolio. Both platforms fulfil important functions of an Online Rail Freight Exchange: Increasing market transparency and competitiveness of rail freight which has thus the potential to increase loadings on existing trains and wagons. Furthermore, ORFE can contribute to preserve existing rail sidings and the implementation of single wagonload services, if sidings either are available on the origin and the destination site or a new siding can be developed. Besides this win-win-situation, side effects should not be underestimated like GHG reduction and relief of

road traffic impacts in sensitive urban areas or bottleneck sections. A better utilisation of existing rail resources may avoid empty wagon loadings and thus improve the image of rail freight given the negative impact rail has on noise and vibrations.

The keys to success of an ORFE are built upon the confidentiality of user's data as well as reliability of information gained. This requires a neutrally managed on-line-platform which needs on the one hand the participation of key players in the operator's market to ensure long-haul transport and on the other hand of regional operators to serve the hinterland by secondary rail lines. In this way, the problem of missing back-haulage could be reduced and thus avoid empty wagon loadings. The aforementioned neutrality of the platform, with its freight capacity and volumes clearly identifiable, also allows for enhanced tendering opportunities for customers. The platform should also be able to service not only the spot market in order to use up any existing short-term capacities identified, but also be a platform that can host longer-term jobs. If it is only confined to spontaneous freight tasks, then its potential for success is considered to be limited. Finally some lack of information about routing and transshipment points respectively facilities could be filled up. For that purpose basic infrastructure elements which have to be defined by the rail network providers to ensure access to the network without discrimination, should be integrated elements of the information systems all over Europe. This seems to be an important step to overcome barriers caused by different technical standards before completing the single European railway network.

To sum up, the following issues are considered by ORFE:

- Data about fundamental capacities of infrastructures and free capacities for actual needs of rail operators (e.g. rail network slots in customer's demanded relations)
- Information about facilities for transshipment and logistics basic services (like warehousing) and freight distribution centres
- Information about available rolling stock which could be consolidated into regular freight train services (single wagon traffic or more likely wagon groups)
- Information about free capacities for slots along rail routes are mostly handled in confidential manner by network providers. This fact constitutes an obstacle not only for industrial customers willing to develop new transport chains but for strategic traffic planning by regional authorities.

AUF EINEN BLICK

Zur Verbesserung der Logistikkette im Sinne der besseren Nutzbarkeit der Ressourcen haben Ende 2013 der Regionalverband FrankfurtRheinMain und das für die Förderung von EU-Projekten zuständige INTER-REG IVB-Sekretariat des Programmraumes Nordwesteuropa (www.nweurope.eu) in Frankfurt am Main die Veranstaltung „Innovative Tools for More Efficient Freight Transport in Europe“ mit Teilnehmern aus Frankreich, Belgien, den Niederlanden, Luxemburg, Österreich und Deutschland abgehalten. Dabei wurden innovative Lösungsansätze zur Verbesserung der Supply Chain und einer nachhaltigeren Organisation der Logistikkette vorgestellt.

Um die Schiene leistungsfähiger gegenüber der Straße zu machen, wurde im EU-Projekt CODE 24 (www.code-24.eu/) unter Federführung des Regionalverbandes die Idee eines internetbasierten Marktplatzes zum Austausch von Informationen über bahnsseitige Laderaumangebote und verladerseitige Nachfrage nach Transportdienstleistungen auf der Schiene bis zur Marktreife entwickelt. Seit Oktober 2013 sind zwei Akteure erfolgreich am Markt und bieten aufbauend auf den CODE24-Erkenntnissen solche Marktplätze für das Internet europaweit an: Freit-One (www.freit-one.de) und Railcargo-Online (www.railcargo-online.com).

Um die intermodale Logistikkette anschaulicher und nachvollziehbarer zu gestalten, bietet das EU-Projekt *weastflows.eu* Mapping-Werkzeug an (www.weastflows.eu). Das gemeinsam vom Hafen Paris und dem Einzelhandelsunternehmen Franprix entwickelte Frachtangebot mit der Nutzung des Binnenschiffs auf der letzten Meile in die Innenstadt verdeutlicht nicht nur das umweltfreundliche Potenzial für die Abwicklung der Supply Chain, sondern bietet zudem gegenüber der Straßenbedienung zuverlässigere Lieferzeiten (www.citizenports.eu).

- Information about the conditions given on the first and last miles to avoid unecological delays there. This is one of the crucial points in the shipper's view that reduces competitiveness of rail transport as against road transport.
- Information about free barge load capacities which can serve spot transports of mass goods.
- Tricky issues are market information and monitoring about competitiveness related to prices and performance indicators.

Inland water way as last-mile solution serving the inner urban area

The inland waterway network and short sea shipping ports form a quite independent transport system. Moreover, these infrastructures are often considered as a remain-



Figure 5: Le Havre-Rouen-Paris Port Synergy serving the hinterland (source: Connecting Citizen Ports 21 CCP21)



Figure 6: Transshipment of swap bodies or containers at the downtown port in Paris (source: Connecting Citizen Ports 21 CCP21)



Figure 7: Vessel returning to Marne Port Bonneuil passing Ile de la Cité (source: Connecting Citizen Ports 21 CCP21)

der of a former industrial area and no longer useable for this purpose and thus subject to land use conversion.

Connecting Citizen Ports 21 CCP21 was initiated in 2009 by seven European inland ports, who realized that they were facing the same challenges while offering the same potential and opportunities. The working packages aimed to increase the acceptability of inland ports, to promote a less conflicting cohabitation through multipurpose land use and a sustainable city distribution of goods. It seems to be an approach to get urban ports out of the industrial backyards and to put emphasis on the service function for local inhabitants and enterprises.

As in Figure 5 shown, the port authorities in the catchment area of River Seine including the overseas port Le Havre themselves have organized as HAROPA Port Synergy. Short inland waterway shipping in the Paris Basin has a long history transporting mainly mineral materials to deliver construction sites. A flat land river system like Seine-Marne-Oise with his sluggish flow of water and a meandering riverbed favours decentralized points of embarkations as depicted in fig. 5. A remarkable case project, presented by Manuel Garrido from Ports of Paris, was drafted in the Paris Region Ile-de-France called Paris Transshipment Platform which provides for a coordinated use of existing port facilities to serve inner urban areas.

The critical traffic circumstances within the City of Paris and the suburban cordon make the distribution of consumer goods difficult especially if delivering times are restricted. Using road transport as a means to deliver them from outlying logistic warehouses close to the motorways into the urban centre costs additional fuel, time and personnel on the one hand and contributes to traffic jams along arterial routes and causes pollution on the other hand. None of the rail goods stations had remained in the inner urban precincts but the embankments of the river Seine are still accessible and available as local transshipment points.

Thus, an amazing reversed gateway situation was created by shifting goods from the lorry to river barges extramural before entering the urban area. The retail seller Franprix ships goods in 26 swap bodies to deliver 80 points of sale in the city from the port of Bonneuil sur Marne to the berth of La Bourdonnais close to the Eiffel Tower (fig. 6). The swap bodies are released from a cross docking logistic centre in the neighbourhood of Port of Bonneuil, cover a waterborne route of less than 20 kilometres before having been transhipped to suitable lorries for city traffic. This transport chain needs reliable

hand-in-hand cooperation of private and public actors investing on port facilities, providing of barges and transshipment equipment, running the distribution fleet etc. Besides that, a site planning free of conflicts with other land use pretensions is essential as well as a supply and traffic management.

Conclusion

Besides a lot of propositions in detail mentioned before the final statement by the moderator Detlev Golletz summarized the workshop results in three conclusions:

- More collaboration between concerned professions and businesses to get system relevant freight transport solutions
- Synchronization of serving systems to realize goods' delivery in a sustainable way
- Funding and investing in research and pilot projects to make actions self-dynamic and self-bearing. ■

NOTES

- [1] The Joint Workshop on Sustainable Freight Solutions hosted by the Regional Authority Frankfurt Rhine Main on 25 November 2013 in Frankfurt am Main was held by the INTERREG IV B Programme Sec-

retariat North-West Europe (www.nweurope.eu), the Connecting Citizen Ports 21 project (www.citizenports.eu), the Weastflows project (www.weastflows.eu, for the atlas: <http://geo.weastflows.eu/>), the CODE24 project (www.code-24.eu) and the Regional Authority FrankfurtRhineMain (www.region-frankfurt.de).

- [2] Transcare (2006): Schienengüterverkehrskonzept für das Rhein-Main-Gebiet. Chancen für NE-Bahnen. Summary download www.region-frankfurt.de/Service/Veroeffentlichungen/Verkehr Regionalverband FrankfurtRheinMain, Wissenschaftsstadt Darmstadt (2013): Schienengüterverkehr in der Metropolregion Frankfurt-RheinMain. Ergebnisse einer Befragung von Eisenbahnverkehrsunternehmen. 2. Auflage
- [3] The initiative for the ORFE-development within the CODE24-project has been launched by the PIM-Institute, University of Duisburg-Essen. Prototype: <http://pim-code24.wiwi.uni-due.de/welcome?locale=en>



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