How to attract continental cargo in North-West Europe

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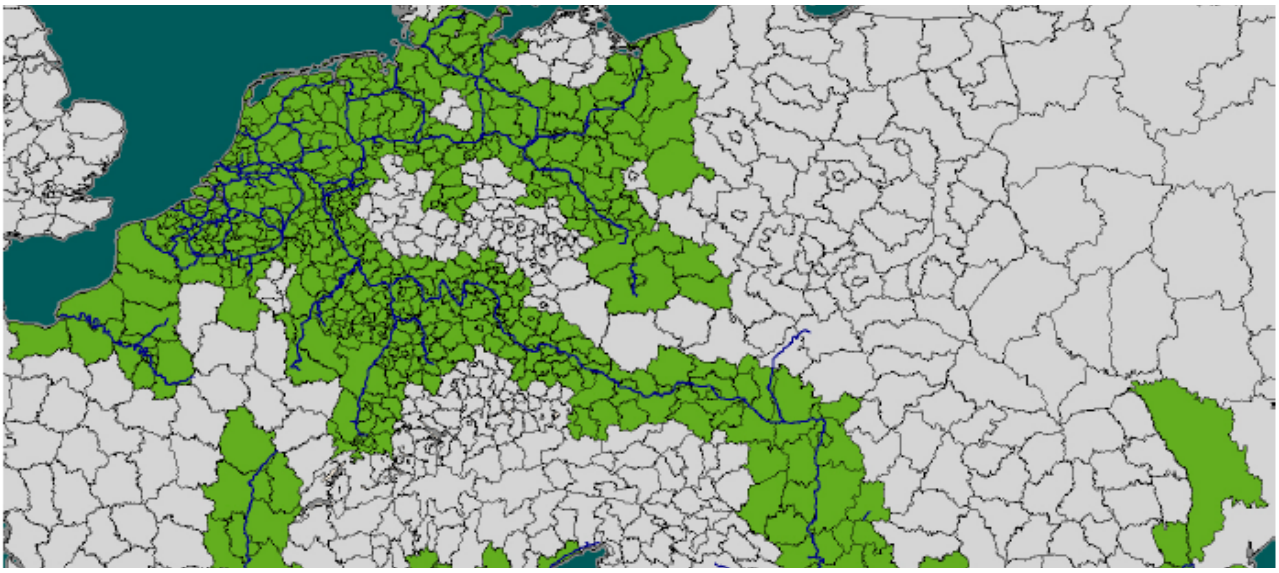
Inland Waterway Transport (IWT) already has a large share in transport in North-West Europe. But if you check the numbers on continental transport, IWT is virtually non-existing even though there is potential and connections are getting better and better.

According to our analysis, the reason for the lack of uptake of IWT in continental transport lies in the limited offer of containers suitable for inland navigation. Most of the container transport goes from the sea ports to the hinterland, even though there is capacity and potential to use container transport also for continental transport. The demand never reached the supply.

Macro analysis potential

We investigated the market potential for the continental IWT market (NUTS-3 regions). We compared the Origin-Destination flows of the cargo on the road and by maritime containers between regions that are also serviced by IWT. We mapped the import/export flows and analysed the potential for continental containerised cargo to be transported by IWT.



Graph: regions between which IWT could play a role.

Regions / corridors	Road continental flows (in tonnes)
Antwerp (BE) / Rotterdam (NL) – Middle Danube (HU)	70,840,054
Antwerp (BE) / Rotterdam (NL) – Czech R. (including freight transported between these regions)[4]	31,599,014
Koblenz (DE) / Rotterdam (NL) – Moselle (FR/LU/DE)	27,053,125
Antwerp (BE) / Rotterdam (NL) – Poland	12,318,482
Rhône – Saône Bassin (FR)	16,049,483
Antwerp (BE) / Rotterdam (NL) – Basel (CH) (including freight transported between these regions) [5]	14,645,963
Antwerp (BE) / Rotterdam (NL) – Neckar	13,102,238
North-West France (FR) – Ruhr Area (DE)	25,883,996
Ruhr Area (DE) – Bremen (DE)	6,213,355
Antwerp (BE) – Rotterdam (NL) – Northern Netherlands (NL)	5,506,347
Middle Danube (HU) – Lower Danube (RO)	2,844,048
Ruhr Area (DE) – Northern Netherlands (NL)	2,722,914
Ruhr Area (DE) – Hamburg (DE)	2,086,098
Po River (IT)	2,052,215
Seine River Bassin (FR)	1,671,564

Table: cargo currently shipped by road.

We estimate that 67.5 million tonnes of the cargo currently transported by road is also suited for intermodal transport along to the existing waterway corridors.

Of course, we need to take into account certain scales such as load factors, empty sailings, etc. but this analysis gives a general overview of the potential.

Comparison modal shift studies

We analysed ELAN and existing case studies of modal shifts on an operational level and extracted the drivers that would generate a modal shift towards the use of IWT and the bottlenecks.

Success factors for shifting cargo

- Offering strategic (mid and long term) and immediate advantages (cost reduction) to the shipper thanks to the intermodal shift (less road taxes, less delay due to road congestion).
- Efficiency in the operational flows: enhancing the operational flow always offers a direct advantage on at least one of the determining factors. This reduces costs.
- Handling costs: the "vertical transport" is the preponderant element in the transport cost and the key to an efficient transport operation. All the KPIs need to come together for the shippers.
- Cooperation: both between the shippers and between the logistic operators. It offers the opportunity for bundling cargo streams and to enhance the operational flows. Bundling needs to be done by the logistics service provider – flows need to be big enough.

Bottlenecks identified preventing the modal shift

- Lack of fitting and competitive intermodal transport units. The 45' pallet wide high cube short sea shipping container seems the most appropriate intermodal unit for continental container transport. Currently it is not available for continental transport, it comes from short sea shipping (only available in hinterland shipment of short sea cargo).
- Handling operations (in cost and time), especially where there are no direct waterway connections to major production plants/distribution centres. More handling needed in intermodal transport. Containers are considerably faster to handle than bulk transport – but there need to be enough goods to be able to use IWT efficiently.
- Investments in superstructure and infrastructure are often required though making use of existing services sometimes offers an answer. Origin-Destination connections to industrial areas that are not directly connected to waterways need to be made.

Business models

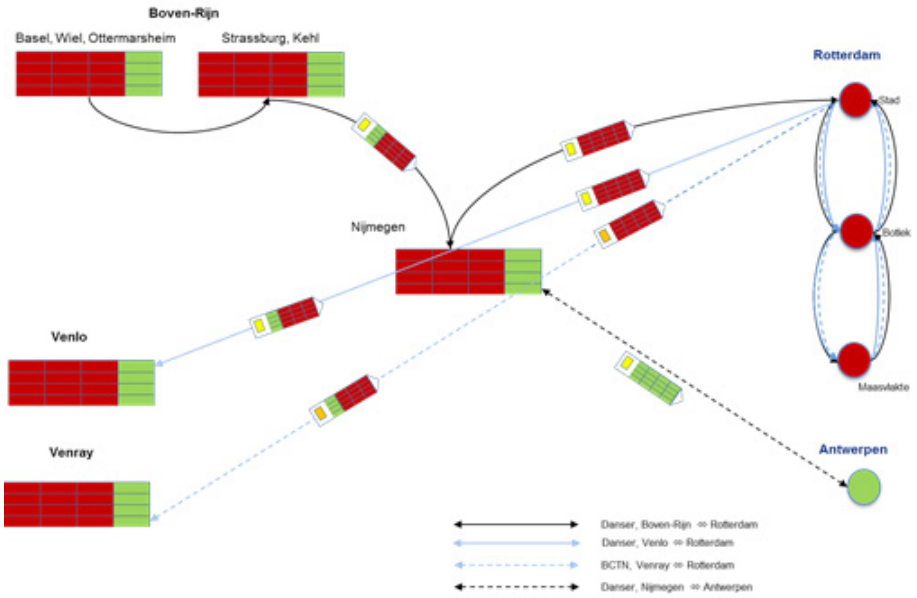
There are different perspectives towards using IWT for continental transport, which all have a different ownership structure, different types of services offered, a need for different access to shippers and consumers. Partnerships that meet the needs of these different perspectives are a determinant factor for a modal shift.

- **Shipping line perspective:** transition from port-to-port services towards door-to-door services, existing network of container terminals – handling import/export by maritime company or shipping line.
- **Deep-sea-terminal perspective:** Control in hinterland operations. Establish a hub in hinterland, terminal in the port – evoked by port authorities themselves. Exclusive connections to hinterland by terminal operator or port.
- **Hinterland operator perspective:** Efficient hinterland services following sufficient demand (mainly in port) - servicing hinterland of that port.
- **Service area perspective:** Terminal operators focus on regional accessibility combined with long-term commitment of shippers for terminal/barge services to sea ports, public cooperation (hinterland platform with providers and industry to serve ports and other areas).
- **Neutral service provider perspective:** Supply chain in control of logistics services providers/ freight forwarders who have partnerships/contractual agreements with specific inland terminals – open terminal where everybody can offer services: rail, road,…

Operational models

We need to create new kinds of operations between systems that go further than only directing services towards ports. Systems need to be consolidated in order to be successful.

The pilot project of BCTN / Danser according to a Hub, Hop and Consolidation model (spokes in 2 directions – see graph) services a lot of different terminals, which generates potential for IWT for continental transport.



Next steps to attract cargo to IWT for continental transport

According to the macro analysis, we need to tap into the continental market for IWT. We need to make a technical analysis of transport equipment needed and potential actors involved.

We need to implement the recommendations to solve the bottlenecks. For example offering more inland waterway container transport (not only to/from sea).

A further analysis of the commercial and operational relationships can help us shape the organisation and structure for continental transport chains, including inland waterways

Questions & Answers

Q: Who plays key role in all this?

A: Logistics service providers are key because they decide which transport modes they offer (IWT, containers, rail, etc.). They need to see how they can provide new services combining different types of transport. We need to make shippers aware once there is a new multimodal offer.

Money will remain the main factor in the choice of transport. Shippers will choose the cost model that is most advantageous for them. This is interlinked with the flow, operations, bundling,…

Logistics providers are key people in this shift, but also terminal operators and logistics container providers need to follow suit. They are aware there is a market, but there needs to be some uptake first. But if they don't offer adapted services, the uptake will be slower. It is a chicken-and-egg situation.

Comment: BCTN and Danser saw opportunities for the pilot to overcome such barriers. They bought 45" pallet-wide containers which seem to be most suitable for handling for continental transport.

Q: There is large economic potential for continental IWT? What effect will this modal shift have? Will megaships in sea ports lead to a congestion of the hinterland?

A: It is true that the infrastructure of inland waterway container terminals need to evolve along to be able to handle more containers. But currently the bottlenecks are not in hinterland terminals but rather in sea ports (in & out of ports). For the time being there is room enough in the inland terminals. So there is room to expand.

Q: How can IWT comply with industrial needs?

A: In our analysis we took the industrial flow into account. We only analysed the potential of transport between areas located around waterway corridors and compared the potential of IWT versus road. There are a lot of initiatives already to get more cargo to IWT e.g. in Flanders we are experimenting with pallet loads.

Comment: For shippers, the shipping cost is more than the price of IWT alone. They need to get information for door-to-door services. They need to see the full picture. In industrial areas, companies are interested in truckloads, not bulk. The IWT sector needs to provide the 'portions' that the industry needs. The way forward is increased cooperation and bundling. Bundling that should be done by the operator instead of the industry.