Identifying Collaborative Shipping Opportunities

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Stefan Creemers
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A meeting of friends: Jeroen

<table>
<thead>
<tr>
<th>Reality</th>
<th>Role Today</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Jeroen playing basketball" /></td>
<td>Owner of Spalding Production of basketballs</td>
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Owner of Spalding

Production of basketballs
A meeting of friends: Stefan

**Reality**

**Role Today**

Owner of Asics

Production of running shoes
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Horizontal Cooperation

• **What** = cooperation where companies bundle their orders/join shipments
• **Why** = to reduce transport costs, CO2 emissions, and congestion
• **How** = by using the available space in truck hauls of one company to ship items of another company
• Vertical cooperation = cooperation with companies at different level of the supply chain (e.g., supplier & buyers)
• Horizontal cooperation = cooperation with companies at the same level of the supply chain
Examples of Horizontal Cooperation
Backhauling
Simple Roundtrip
Complex Roundtrip
Simple Collect and/or Drop
Complex Collect and/or Drop
What is a **good** opportunity?

- Total Distance/volume/tkm
- Shared distance/volume/tkm
- Ratio of shared distance/volume/tkm
- Closed distance/volume/tkm
BBaRT: Bundling, Backhauling, and Roundtrip Tool

• **What** = tool that identifies bundling, backhauling, roundtrip, and collect and/or drop opportunities in a large database of transport lanes

• **Why** = impossible to analyze a database of 100,000 transport lanes manually (or even using Excel)

• **How** = clever combination of a bounding-box approach, sorting, and efficient search algorithms

• Collect and/or drop opportunities are found by rotating the system of coordinates

• Implementation of the opportunity itself is done at a later stage, we only care about identifying the best opportunities