

TRI = VIZOR

THE WORLD'S FIRST CROSS SUPPLY CHAIN ORCHESTRATOR®

The World's First Cross Supply Chain Orchestrator
(2008)

*From a fragmented and inefficient transport system
to the Physical Internet*

Through horizontal collaboration

First steps

4th International Physical Internet Conference – IPIC2017

Graz, 06-07-16



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(2008)

- ≡ World's First Cross Supply Chain® Orchestrator™
- ≡ Since November 2008
- ≡ 2 private shareholders
- ≡ Spin-off of the University of Antwerp
- ≡ Strategic Advisory Board
 - ≡ Wouter De Geest (CEO BASF Antwerpen)
 - ≡ Luc Hooybergs (CEO NIKE CSC)
 - ≡ Roger Roels (Member of Executive Committee of DP World, Dubai)
 - ≡ Marc Vandenplas (former CEO of various LSP's)
 - ≡ Alain Verschoren (Rector University of Antwerp)

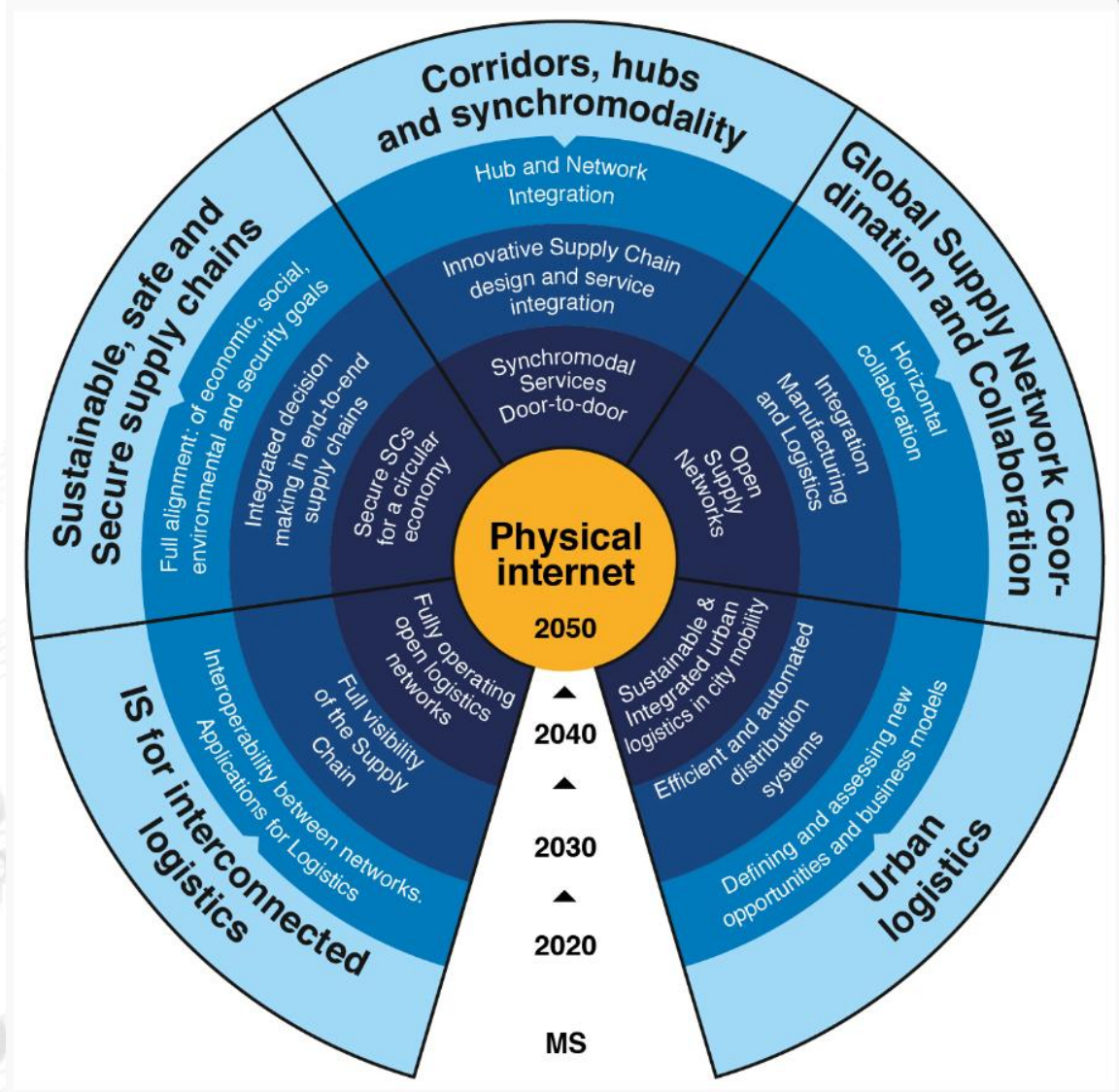
TRI-VIZOR's track record

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<p>2009</p>	<p>Award</p> <p>Air Chase Competition Winner 2010</p> <p>TRI-VIZOR</p> <p>In project with PCM Antwerpen Guldenwell Last Distribution Belgium</p>	<p>2011</p> <p>1st horizontal collaboration project</p>	<p>Award</p> <p>WINNER</p> <p>Supply Chain Innovation Award</p> <p>TRI-VIZOR Baxter DS</p>	<p>Award</p> <p>Belgian Awards for the Environment 2011</p> <p>warding innovation for sustainability</p>
<p>Award</p> <p>enter prize</p>	<p>2013</p> <p>NATIONAL GEOGRAPHIC™</p>	<p>Award</p> <p>SSS</p>	<p>Award</p> <p>CO₂</p>	<p>Award</p> <p>Vereeniging voor Inkoop en Bedrijfslogistiek PICS</p> <p>Supply Chain Award</p> <p>PROJECT OF THE YEAR 2014</p> <p>Prize of the Audience</p>
<p>Award</p> <p>European Logistics and Supply Chain Professional of the year 2014</p>	<p>Award</p> <p>ELA 30 years</p> <p>EUROPEAN LOGISTICS ASSOCIATION</p> <p>Project of the year 2015</p>	<p>2015</p> <p>Collaborative Control Tower sold to Ahlers</p>	<p>Award</p> <p>dS De Standaard</p> <p>RADICALE VERNIEUWERS</p>	<p>2016</p> <p>TRI-VIZOR</p> <p>THE WORLD'S FIRST CROSS SUPPLY CHAIN ORCHESTRATOR®</p> <p>2.0</p>

Research agenda ALICE - EC

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The Physical Internet

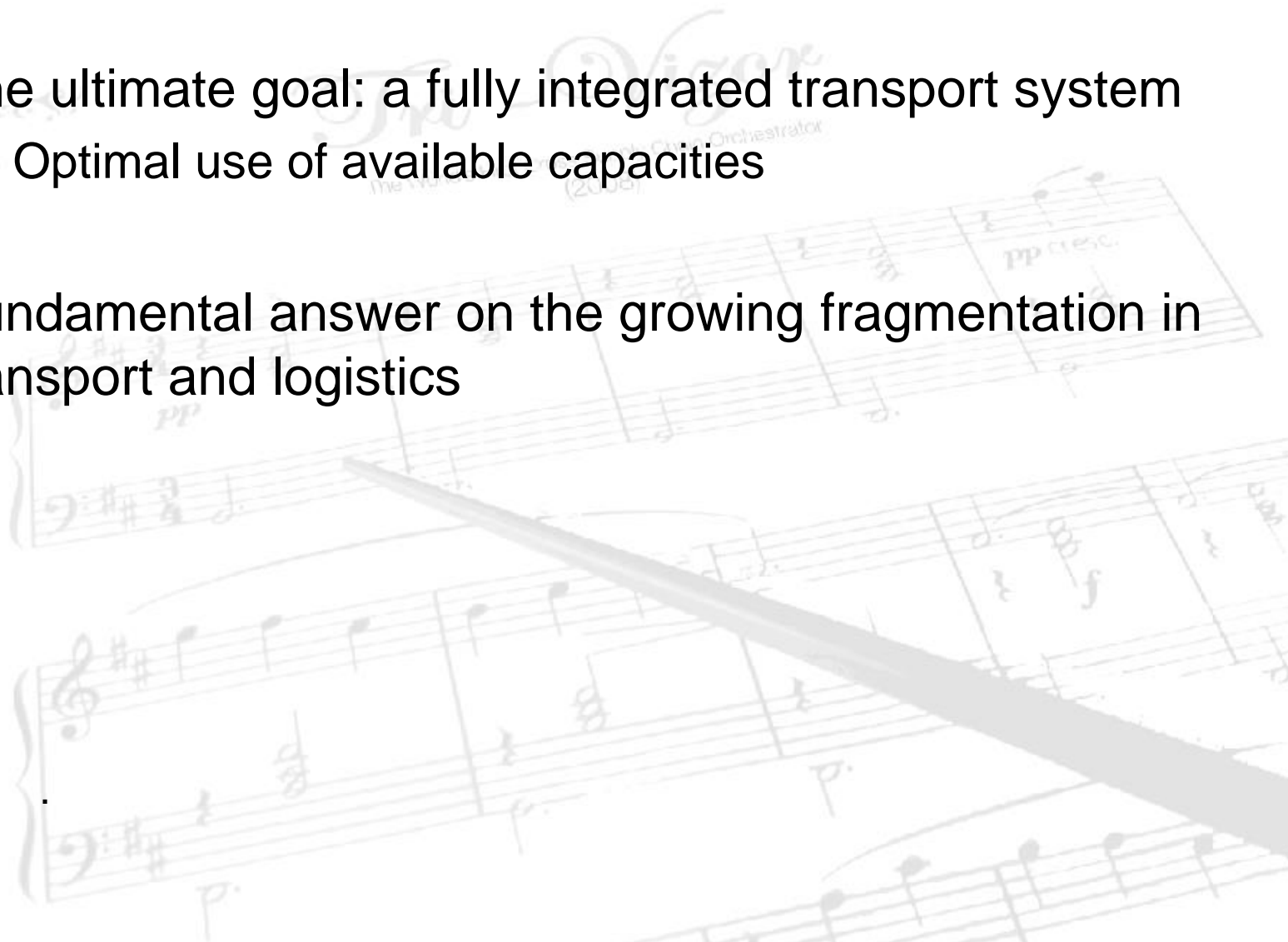
- ≡ Applying concepts from internet data transfer to real-world shipping processes.
 - ≡ An open, global logistics system founded on physical, digital, and operational **interconnectivity**.
 - ≡ "Transforming the way physical objects are handled, moved, stored, realized, supplied and used, aiming towards global logistics **efficiency and sustainability**."
 - ≡ [The Physical Internet Initiative's manifesto, Benoit Montreuil, 2012]
- ≡ The Physical Internet is intended to replace current logistical models, because:
 - ≡ Current capacity utilization is low & capacities are not unlimited
 - ≡ **Capacity** needs to be **shared** in a **better and a fair way**

The Physical Internet

- ≡ The ultimate goal: a fully integrated transport system
 - ≡ Optimal use of available capacities

- ≡ Fundamental answer on the growing fragmentation in transport and logistics

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World Economic Forum Supply Chain Study 2009

- ≡ 24% of good vehicles in the EU are running empty
- ≡ Average loading of the rest is 57%
- ≡ Overall efficiency: **43% (!)**
- ≡ Flow imbalance could only explain half of this loss

*Causes?
Improvements...?
Breakthroughs...?*

How long can this continue?

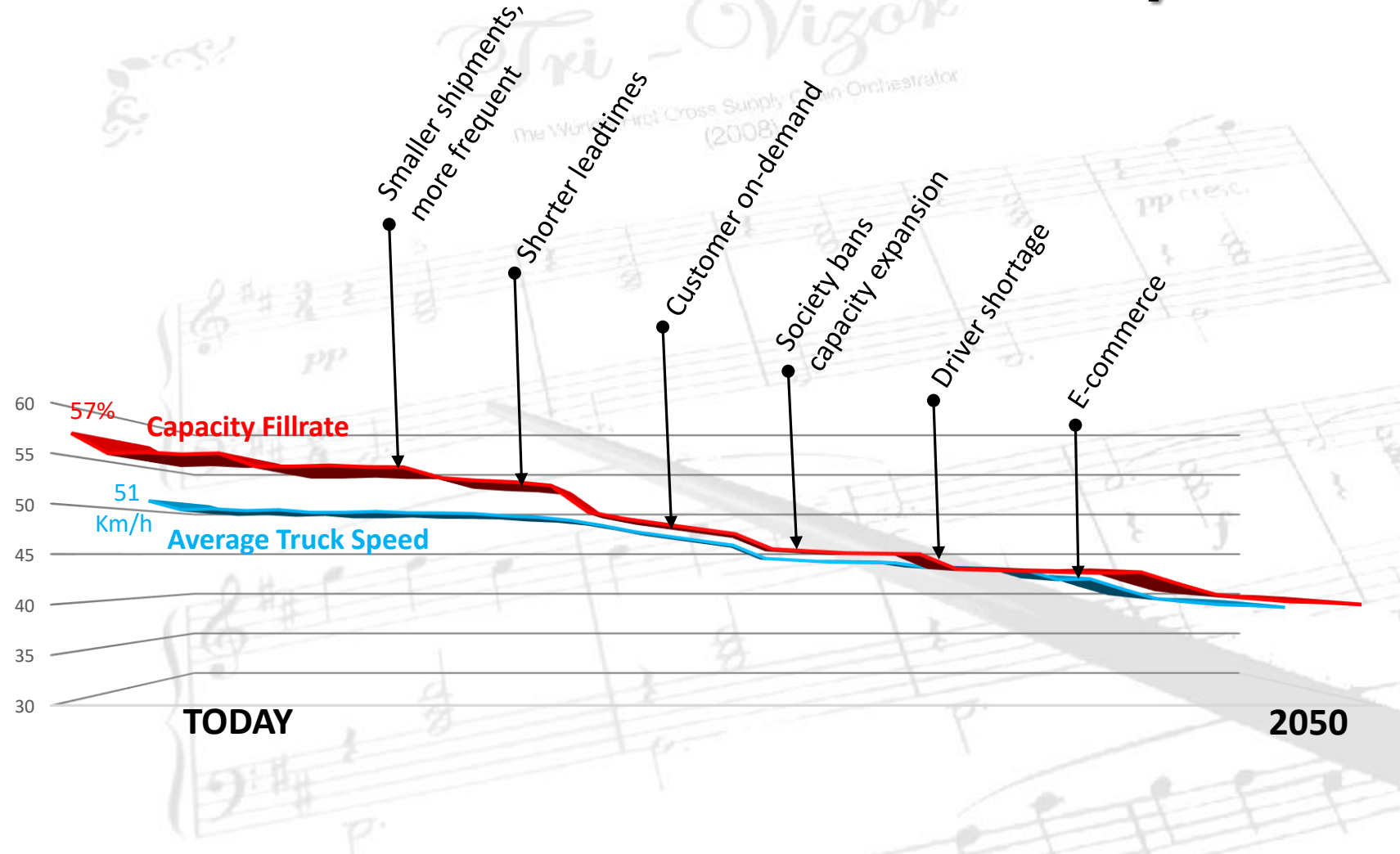
- ≡ Transport and logistics responsible for 14-20% of global *carbon footprint*
- ≡ Growth in transport generates more and more capacity problems - congestion



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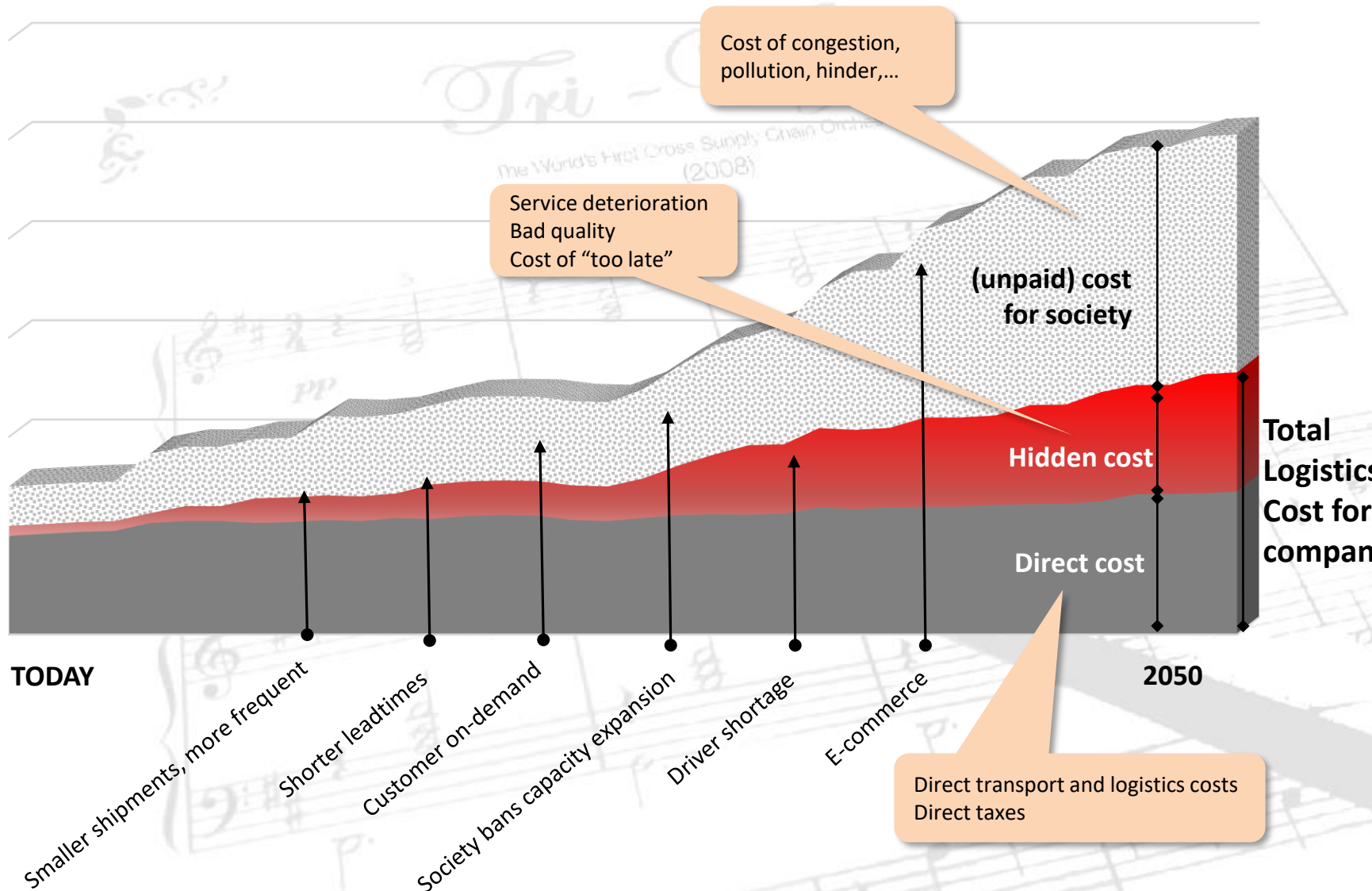
Why current business models will fail very soon

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If we keep going, this will happen!

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Current transport system

fragmented

Fragmentation

- ≡ Numerous logistics providers
- ≡ Ever smaller shipments
- ≡ Mosaic of policies and regulations
- > Transport considered as **a commodity**



- ≡ “Transport is **vital**” [EC White paper on transport, 2011, Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system]



Current transport system

under pressure

Can be improved by:

- ≡ **Pricing policy** – smart and fair road pricing system;
- ≡ **Efficiency** – vertical and horizontal collaboration;
- ≡ **Smart logistics** – “design for logistics”;
- ≡ **Multimodality** > Co-modality > Synchromodality;
- ≡ **Innovation** – adding extra capacity through a new transport mode or a new technology

What will be the new business models?

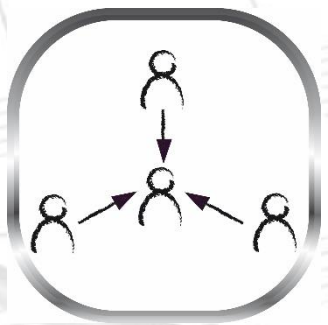
Smart, sustainable and fair logistics, based on sharing capacity and resources



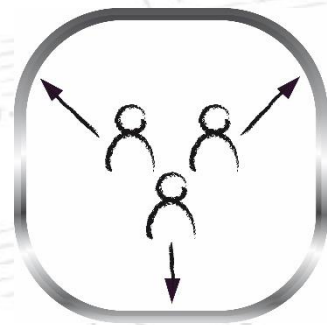
Bundling



Clustering



Pooling



Sharing

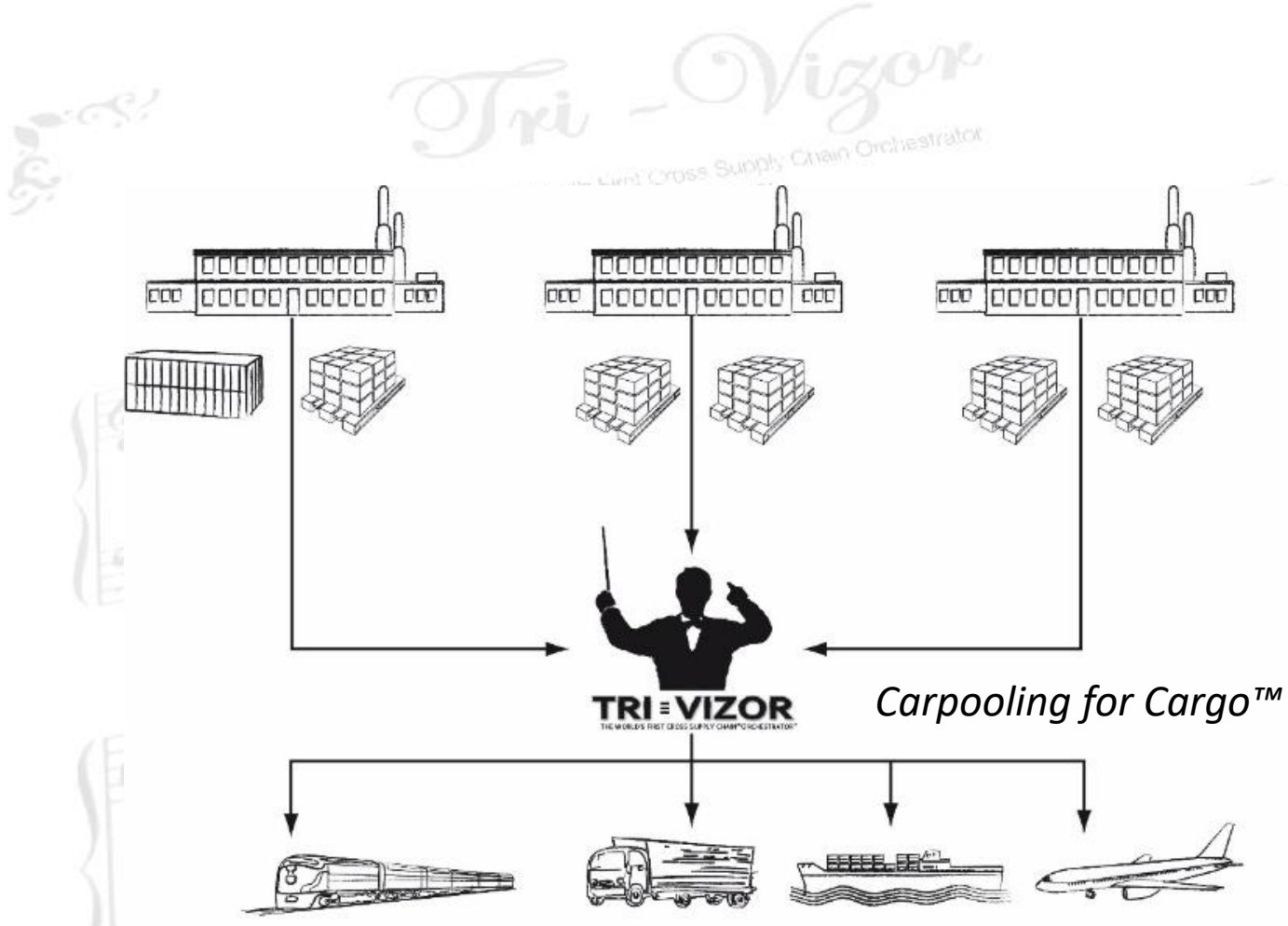
by means of horizontal collaborations and partnerships

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Cross Supply Chain™ Need for an orchestrator

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Community Management



Trustee

- ≡ Managing, monitoring, improving and expanding the community
- ≡ Optimization of the community gains
 - ≡ **Efficiency:** Min. Total Supply Chain Cost
 - ≡ **Effectiveness:** Max. Service Level
 - ≡ **Sustainability:** Min. Carbon Footprint

The world's first orchestrated horizontal collaboration Pharma sector

Bundling

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Supply Chain
Innovation Award
Berlin 2011

Winner
TRI-VIZOR
UCB-BAXTER-H.ESSERS



- Result :**
- Cost:
 - -10%
 - Service:
 - *increased*
 - Sustainability:
 - -30%

Best practice: Multi-supplier platform for last mile retail distribution



PEPSICO



zora
Orchestrator

Fresh & Chilled Food (2-6°C)

Clustering



Nestlé

Good Food, Good Life



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Best practice

pilot in frozen food - *"The proof of the pudding,..."*

- **Frozen food** (vegetables and potatoes) together on rail to Italy
 - Initiated and facilitated by **POM West-Vlaanderen**
 - Supported by Vegebe/Belgapom
- **Innovation³:**
 - Horizontal shippers' collaboration – cooperation among 'conculeagues'
 - Frozen products on intermodal-rail – D/E reefer box
 - Stable solution through sustainable partnership with appropriate logistics provider



AGRISTO

PinguinLutosa
FOOD GROUP



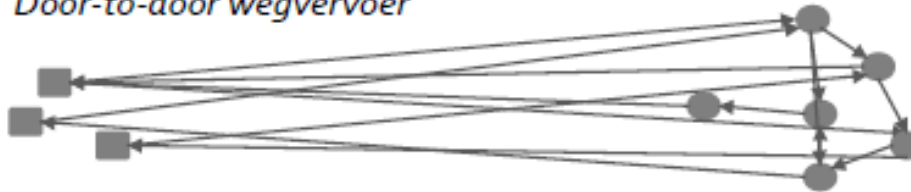
Best practice

pilot in frozen food - "The proof of the pudding,..."

- After test and pilot (± 6 months): structural collaboration
- Exposure for *early believers*
- Entrance of new shippers

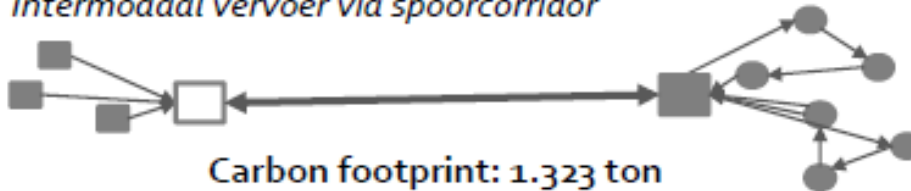


Door-to-door wegvervoer



Carbon footprint: 3.717 ton

Intermodaal vervoer via spoorcorridor



Carbon footprint: 1.323 ton

• Result :

- Cost:
 - *break-even now,*
 - *perspective of substantial gains*
- Service:
 - *increased*
- Sustainability:
 - *break-through*

Best practice pilot in chocolate transport

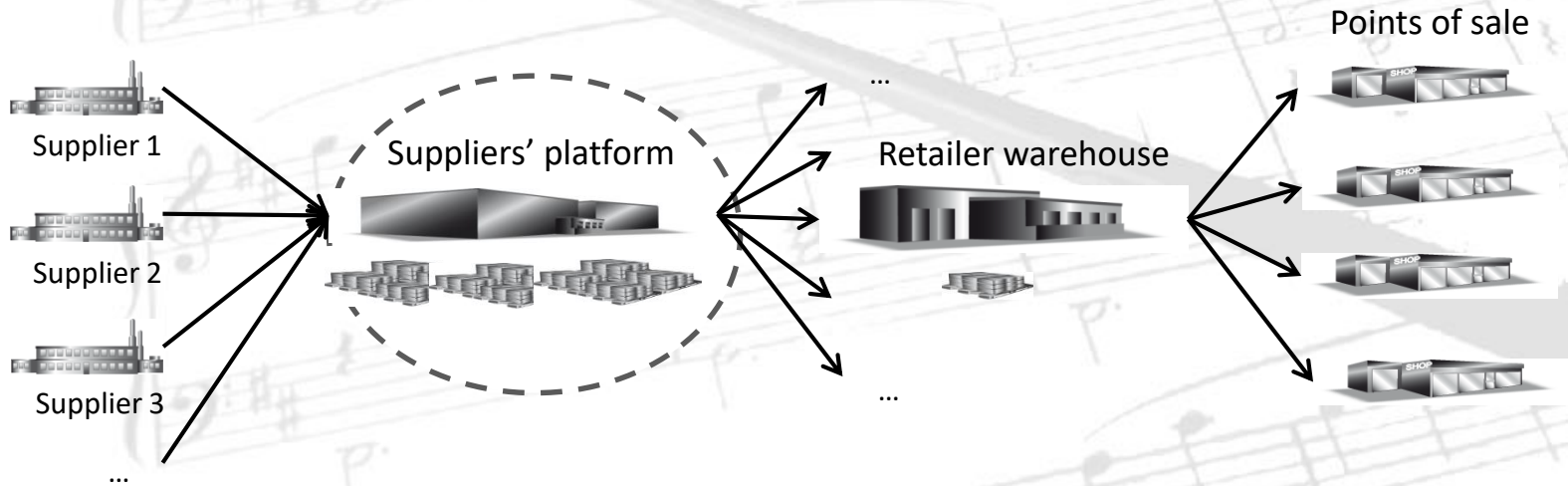
- **Chocolate products on pallets to UK retail**

- Initiated and facilitated by **POM Antwerp**
- Operate and Orchestrate approach (O&O concept)



- **Innovation³:**

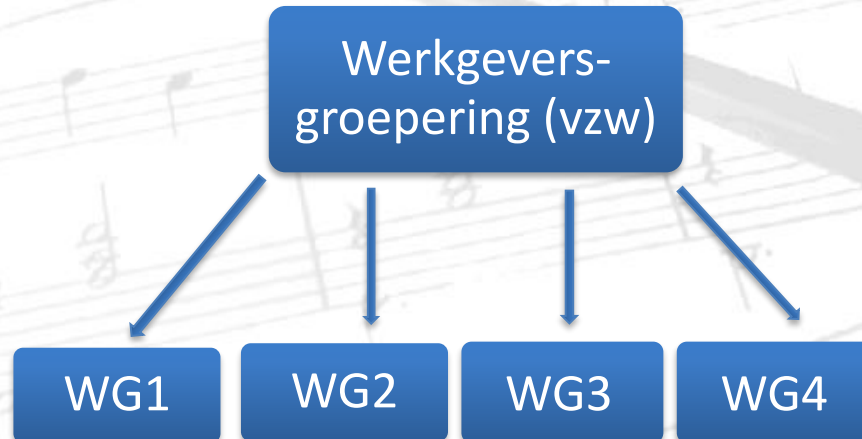
- Horizontal shippers' collaboration – cooperation among 'conculeagues'
- Temp controlled products on intermodal road-SSS shuttle
- Stable solution through sustainable partnership with appropriate logistics provider with global logistics offering



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Best practice: pooling of human resources

- Limburgse Pool Transport & Logistiek vzw
 - Cooperative organisation – horizontal collaboration among transport companies (peers)
 - Dealing with the shortage of truck drivers
 - “Flexicurity”
 - Fair deal – collaboration rules

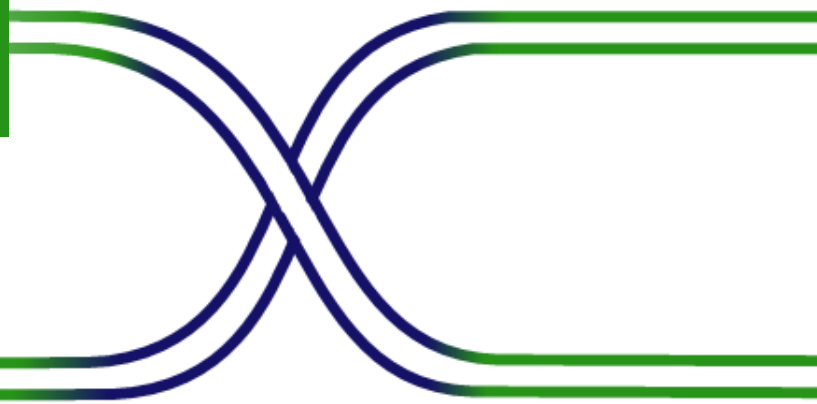




CHESTRATOR®

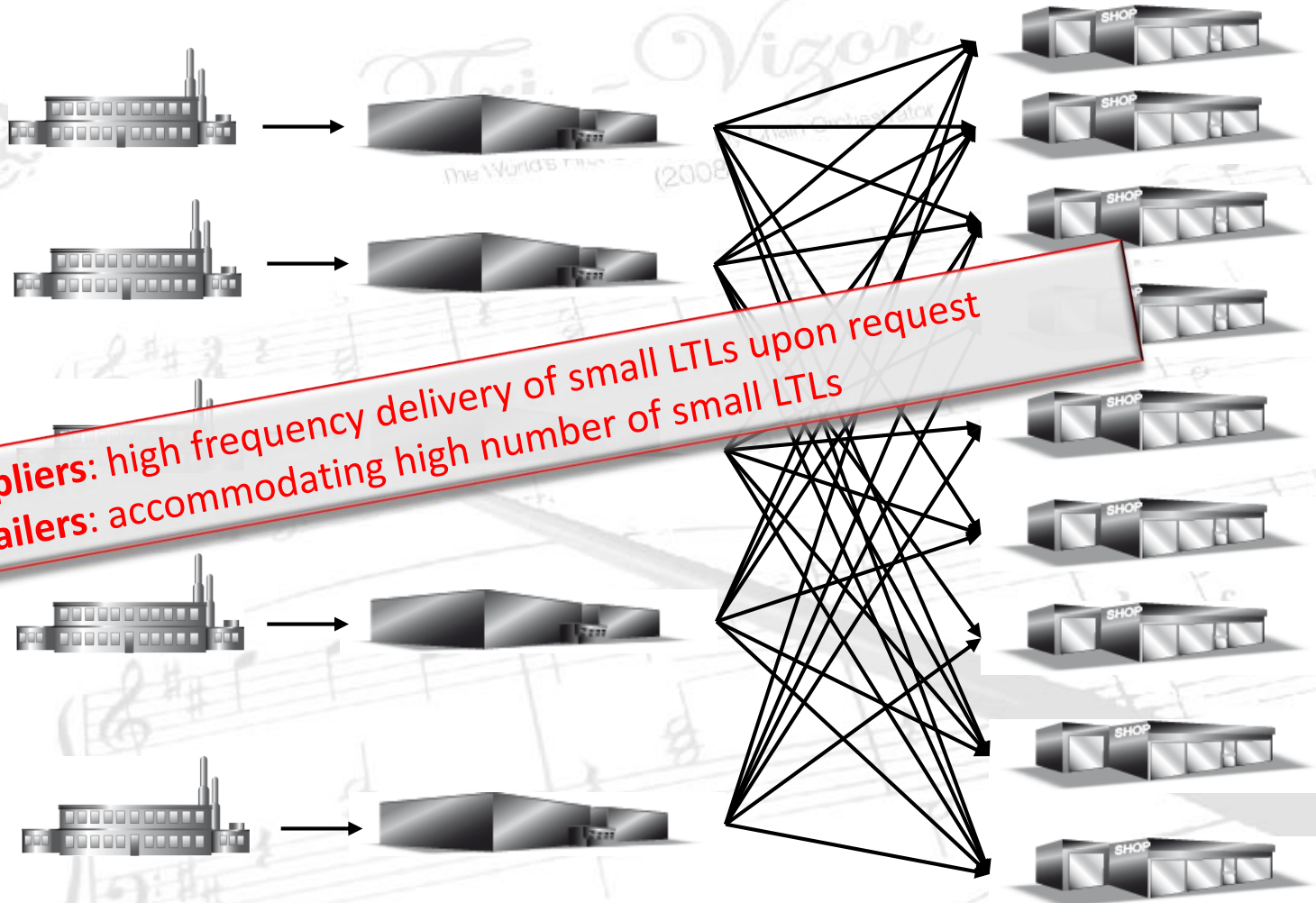
Multi Suppliers Multi Retailers (MSMR) Platform - NexTrust

Bart Vannieuwenhuyse
4th International Physical Internet Conference –
IPIC2017

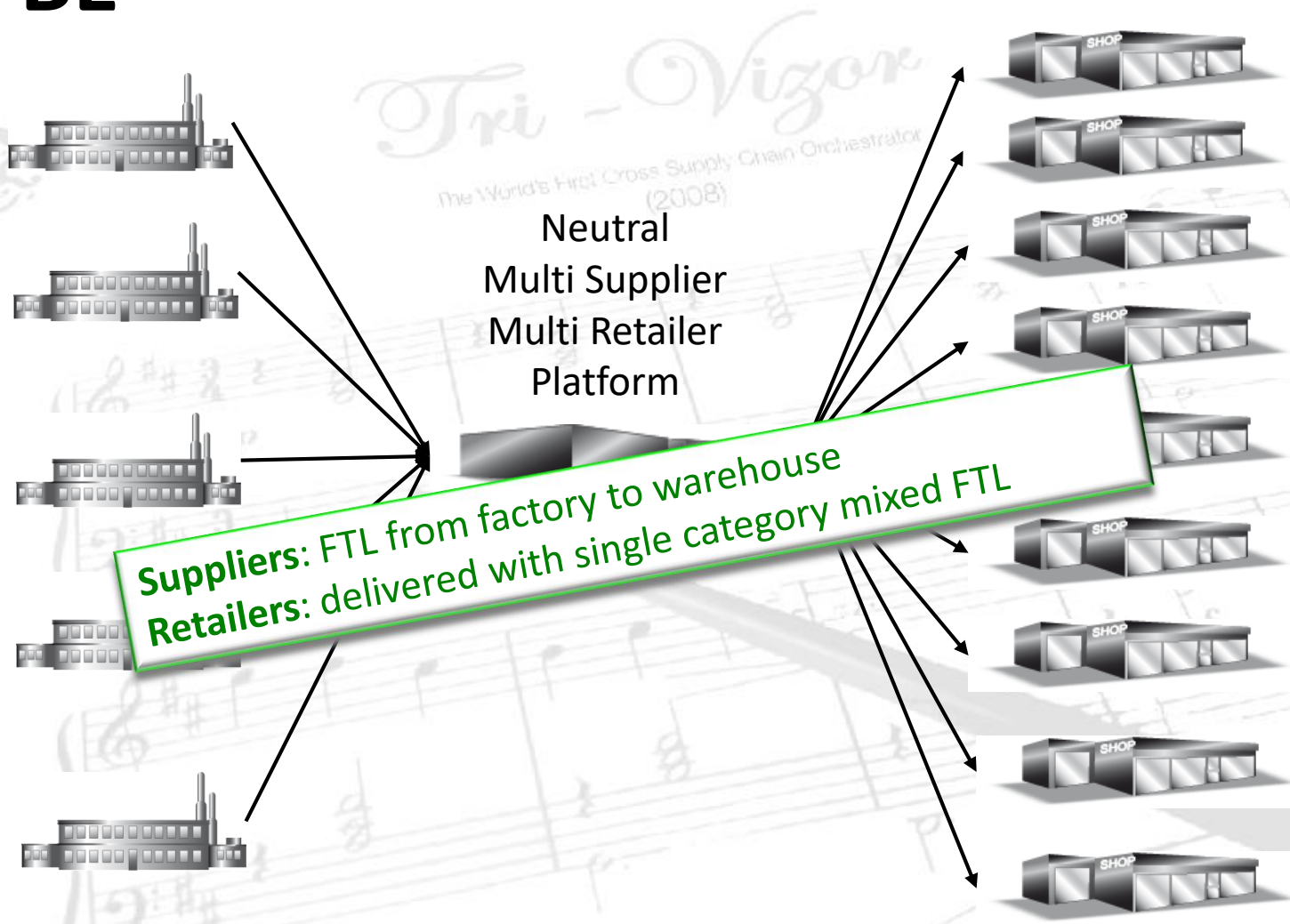


THE

AS-IS



TO-BE

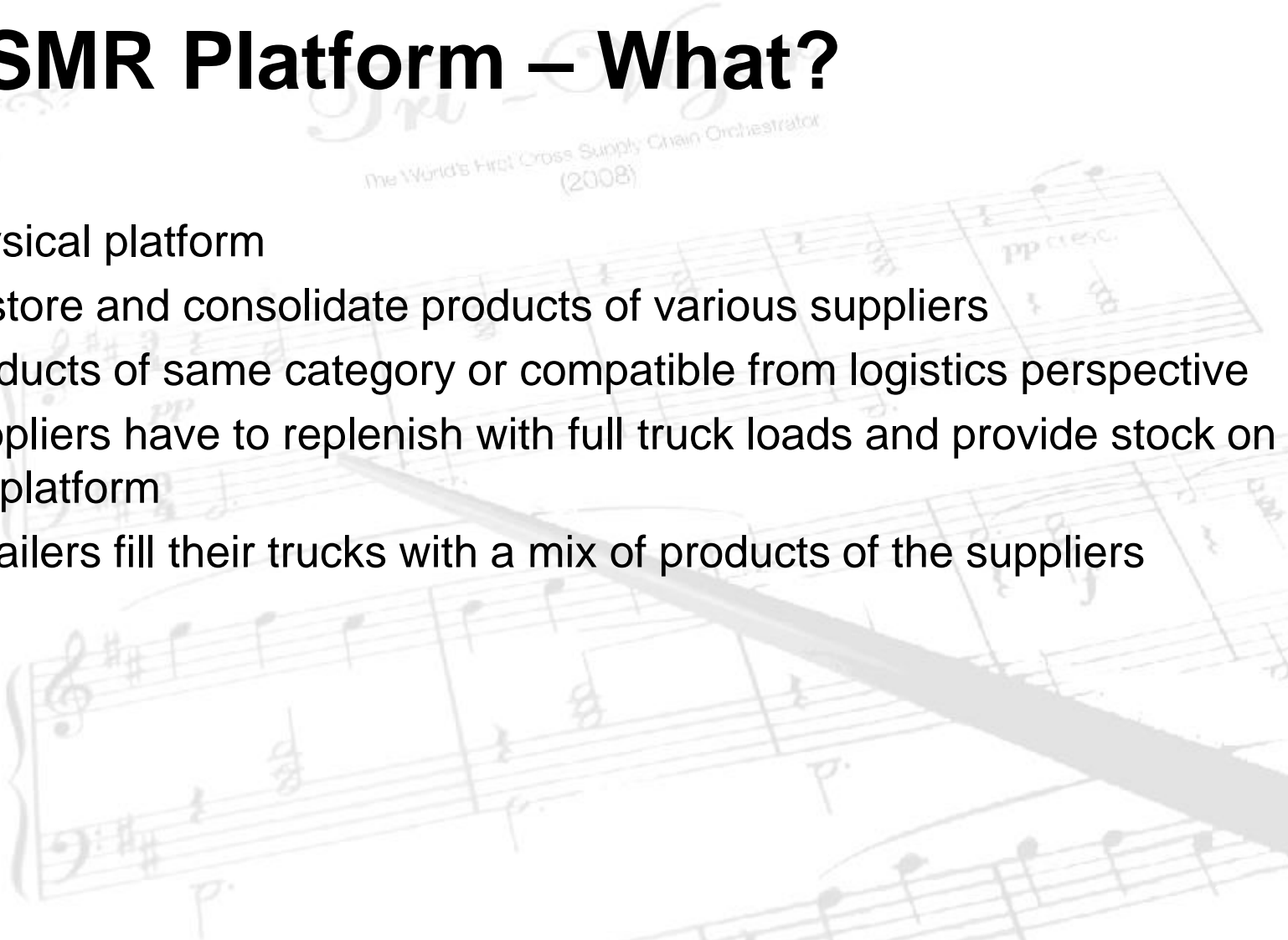




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MSMR Platform – What?

- Physical platform
- To store and consolidate products of various suppliers
- Products of same category or compatible from logistics perspective
- Suppliers have to replenish with full truck loads and provide stock on the platform
- Retailers fill their trucks with a mix of products of the suppliers



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MSMR Platform – Why?

Increased efficiency, effectiveness and sustainability through:

- Reduction of the number of vehicles
 - Reduction of the GHG (green house gasses)
 - Improvement of the load factor of the capacity
- +
- Reduction in logistics costs through consolidations and scale effects
 - Increased service levels

MSMR Platform – How?

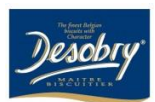
- Belgian distribution of cookies, biscuits and pastries.
- Ultimately:
 - including all suppliers (more than 40...)
 - Including all relevant ship-to points of retailers for this category
 - Including all temperature regimes (ambient, 14-18°C, frozen)
- Guided by trustee to guarantee compliance with EU competition law
- Trustee should guarantee benefits for all partners of the platform through a fair gain sharing mechanism
- Operate – Orchestrate setup: collaboration between trustee-orchestrator and LSP-operator for a better synchronization of the flows

Pilot

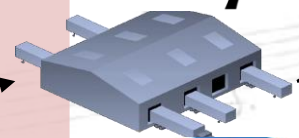
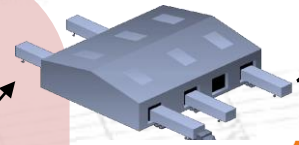
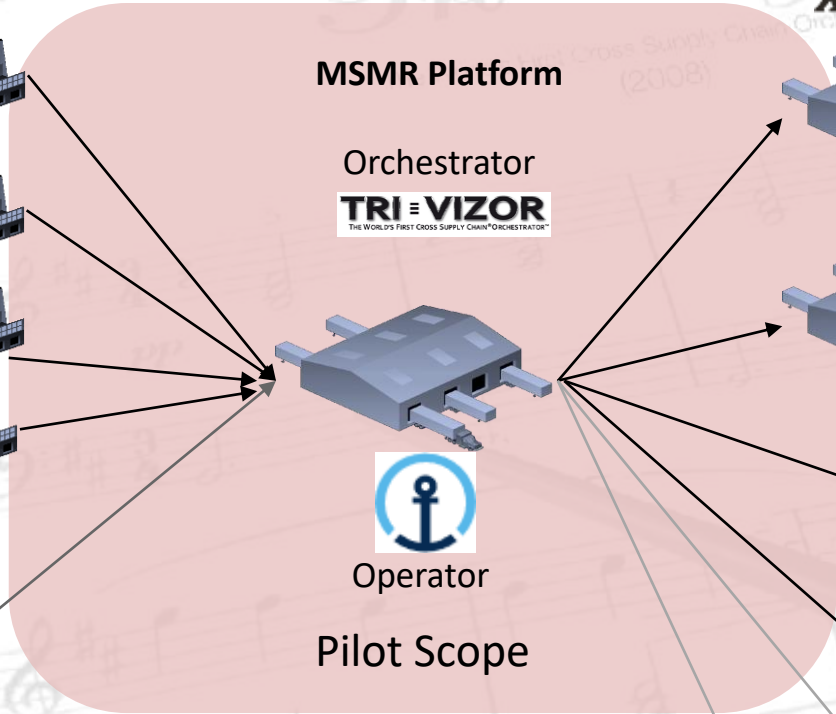
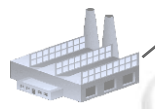
- In order to test the feasibility of the MSMR platform
- Time: March 6th – March 31st 2017
- LSP: Kuehne & Nagel
- Consolidation centre: K+N Mechelen-Zuid
- 4 suppliers: Vondelmolen, Vermeiren Princeps, Poppies, Desobry
- 4 retailers: Delhaize, Colruyt, Okay, RPCG
- Based on the lessons learned and the outcome of the pilot, the benefits of the MSMR platform for each partner involved will be demonstrated.

Pilot setup

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Supplier-n



Multiple Ship-to's

Point of Sale

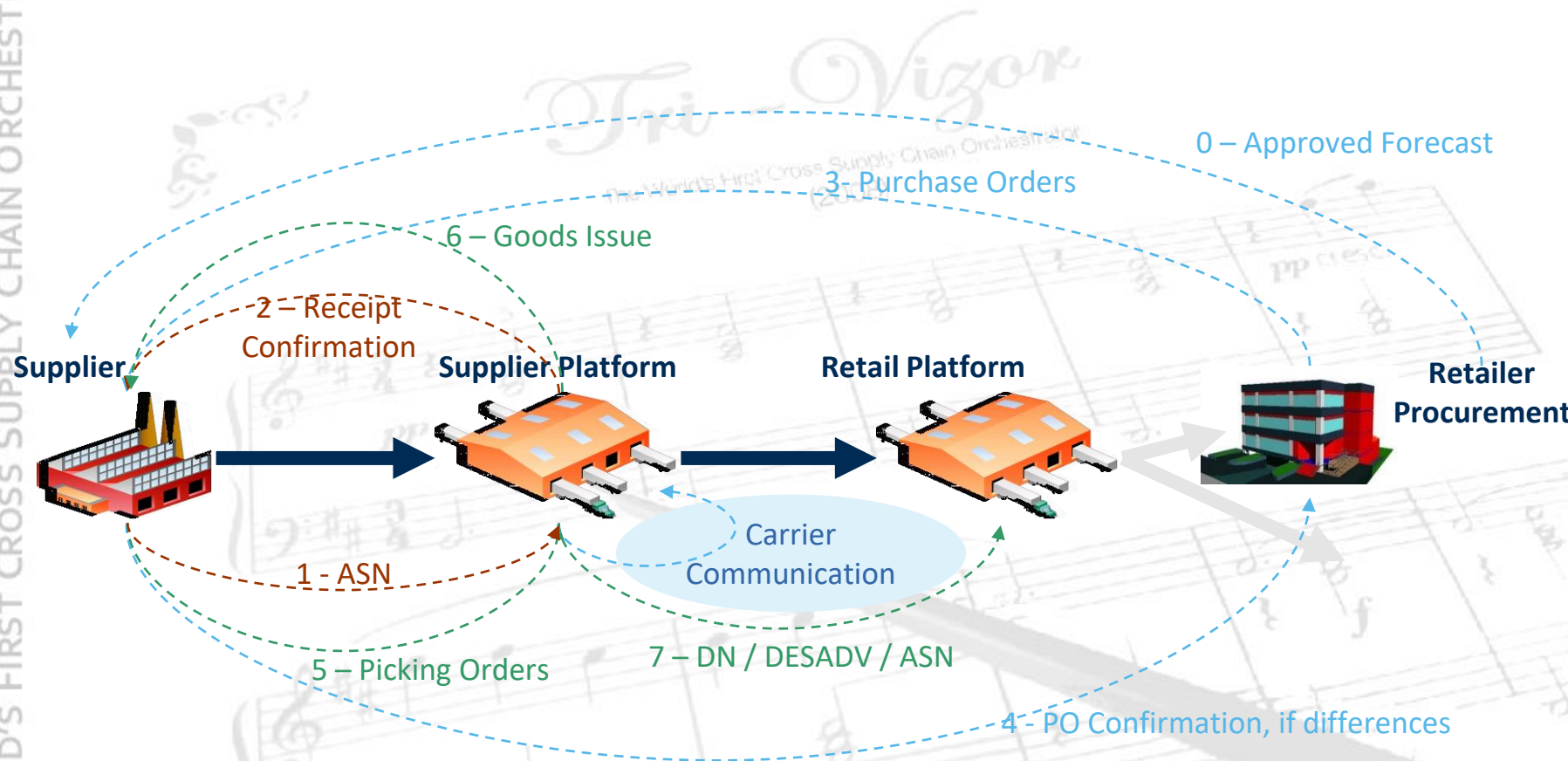
Point of Sale

Point of Sale

Point of Sale

Trustees: TRI-VIZOR, Giventis
Legal partner: Kneppelhout & Korthals
Academic partners: Vlerick Business School, VU University of Amsterdam

Pilot | Information Flows



Other Interfaces


- > Material Master Data (optional)
- < Stock Movements
- < Daily Stock Image

- > stock replenishment
- > outbound deliveries
- > other info flows

Some figures

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Platform overview	
	
Inbound	
Pallets in	982
transports in	32
average pallets per truck in	32,4
fill rates in	98%
Outbound	
pallets out	940
transports out	33
average pallets per truck out	29,2
fill rates out	89%
*excl. emergency inbounds	
*excl. emergency outbounds	

Steps after the pilot

1. Calculations and simulations of business cases of participating companies and potential participants
2. Design of the final MSMR Platform
3. Approval of final MSMR Platform by participating companies
4. Confirmation of participation of community companies
5. Operational workout of Operate & Orchestrate (O&O) concept
6. Approval of O&O concept by community
7. On-boarding of additional suppliers
8. On-boarding of additional retailers

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(2008)



First step towards the Physical Internet: development of logistics platforms

- ≡ **Clustering** of activities – economies of scope
- ≡ **Bundling** of freight flows – economies of scale
- ≡ **Pooling** of resources and equipment
- ≡ **Sharing** of capacities

Who plays the role of orchestrator?



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