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Intermodal Logistics Centres and Freight Corridors – Concepts and Trends

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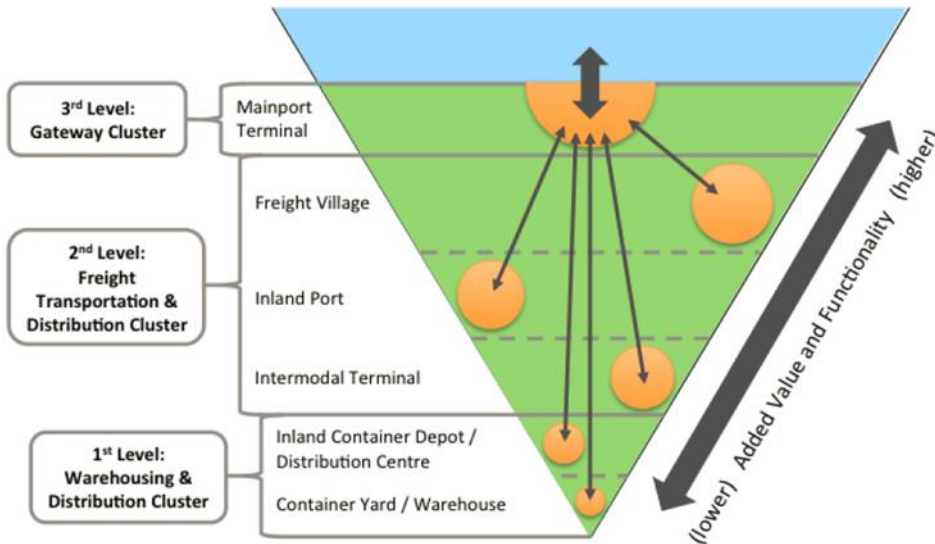
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1. Logistics Centers and Freight Villages

Definitions

Logistics Centers Hierarchy



Standardized Logistics Centre Hierarchy

Source: (Higgins, et al., 2012, p. 14)

Freight Village

- Large industrial estate where logistics companies settle
→ spatial concentration of logistics
- In vicinity to urban agglomerations, motorway and rail network
- Intermodal terminal
→ integration of transport modes, access to freight corridors
- Service facilities
→ synergy effects
→ value adding neighbourhood
- Usually developed and financed through PPP
→ win-win-situation

1. Logistics Centers and Freight Villages

Benefits of Freight Villages

FV are a success story in Europe because of benefits for Private Sector

- Land available, ready for construction
- Intermodal interface between long distance transport and short distance transport
→ short reaction and delivery times; intermodal access
- Round the clock operation without disturbing neighbors
- Synergies and cost savings through co-operation
- Wide service spectrum
(truck service, customs clearance, etc.)

Public Sector

- Creation of jobs
- Taxes for municipality
- Congestion in city is reduced
- Reduction of emissions
- Concentration of infrastructure investments, spatial planning
- Economic growth and competitiveness of the region



Ranking of Freight Villages in Europe 2015

Source: <http://www.gvz-org.de/index.php?id=190>

2. Freight Corridors As A Global Trend

North Sea Baltic Corridor / Rail Baltica

North Sea Baltic TEN-T Corridor

- 5,931 km
- 8 countries

Rail Baltica Project will create a new economic corridor

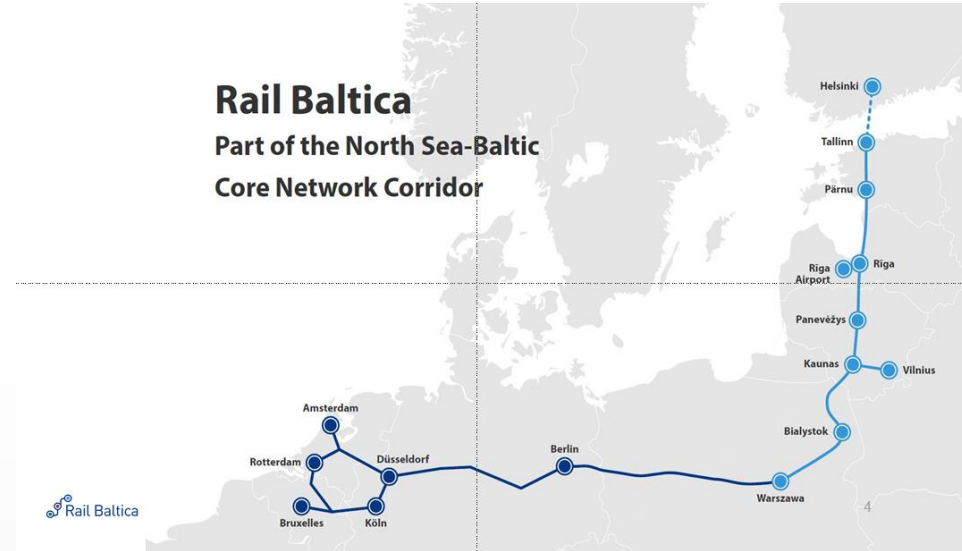
- 870 km, 5 countries
- Warsaw, Vilnius, Kaunas, Panevežys, Riga, Pärnu, Tallin, Helsinki
- 1435 mm gauge, 740 m train length (on parts within 1520 mm gauge)
- Intermodal terminals in Kaunas (LT), Salaspils (LV), Muuga (EE)
- 5.8 bn €, to be completed in 2025

Lithianian Government initiated the development of Freight Villages

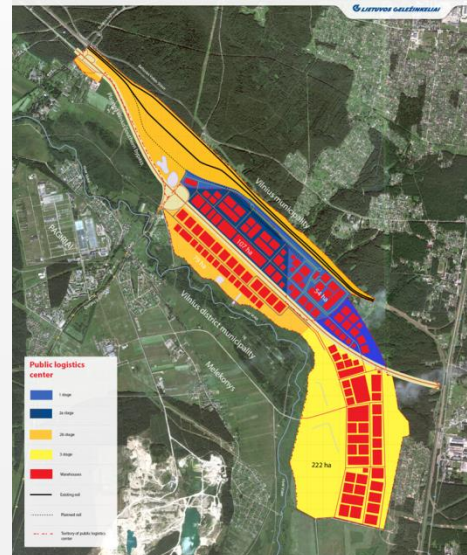
in Vilnius (Vaidotai), Kaunas, Siaulai and Klaipeda

Rail Baltica

Part of the North Sea-Baltic Core Network Corridor



Source: Rubesa, Baiba A.- Rail Baltica – Project of the Century.- Riga, 2017



Vilnius Transport Logistics Park
Source: Lithuanian Railways

2. Freight Corridors As A Global Trend

India Jal Marg Vikas Project, National Waterway No. 1
Eastern Dedicated Freight Corridor (Rail)

Ganga river will become the first modern inland navigation fairway in India

- 1,360 km-stretch of the Ganga river between Varanasi and the seaport of Haldia
- 6 multimodal terminals planned
- costs \$ 800 mio,
\$ 375 mio \$ from World Bank

Dedicated Eastern Freight Corridor (Rail)

- 1,856 km electrified rail freight track
- 1676 mm Indian wide gauge
- between Dankuni (West Bengal) and Ludhiana (Punjab)
- costs \$ 4.44 bn
\$ 2.725 bn \$ from World Bank

In Varanasi a Freight Village with a multimodal terminal can serve as transshipment node and cargo generator



Source: <http://www.worldbank.org/en/news/video/2017/04/10/india-ganga-waterway-an-artery-for-trade>



Varanasi - construction of the jetty
Photo Wagener

3. Challenges and Concepts for FV

Role of the State and Master Planning

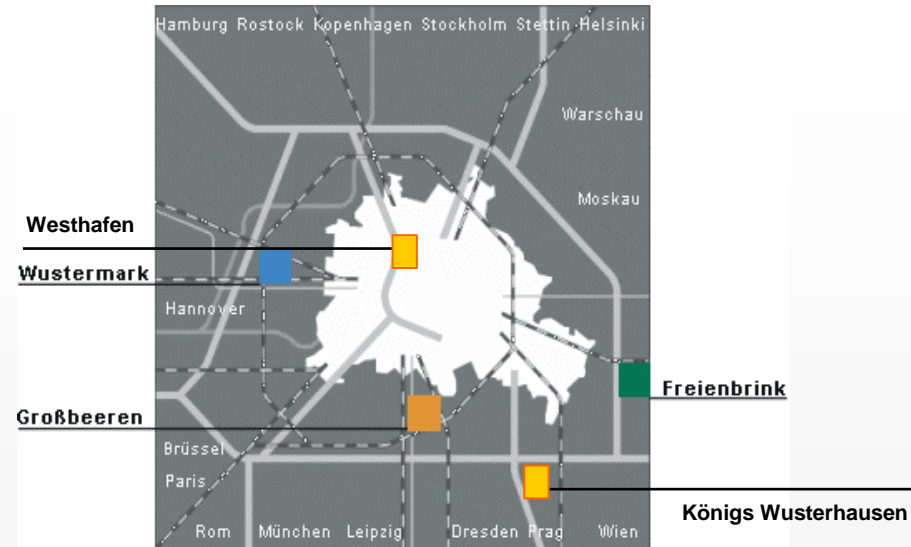
The development of a FV is complex task and needs co-operation of all parties involved, co-ordination and planning from the very beginning

1. Active role of the State

- High investments into infrastructure (roads, rails, energy, water, ...)
- Non-profit orientation of land development results in attractive land prices and stability
- Long lasting and far reaching impacts on regional and urban development

2. Master Planning is needed

- Spatial planning determines designated areas for logistics
- Feasibility study for the FV proves viability
- Cooperation of different stakeholders is needed (municipality, district, road administration, railway, ...)



Source for Map: Senate of Berlin

3. Challenges and Concepts for FV

Selecting Location and Land availability

The key success factor for a Freight Village is the right location.

3. Selecting the right location

- An unbiased Multi-Criteria Analysis helps to assess different options and to identify the right location
- Interdisciplinary groups of experts
- Less influence of interest groups

4. Land availability

- Availability of large areas of >100 ha is a bottleneck often
- Different ownerships and different interest
- Land development for FV is in public interest
- Do legal provisions for public land developments exist? (e.g. special title in German construction law)

1 Existing territory
<ul style="list-style-type: none">• Available state land area• Private land, which should be taken for society purposes• Is there a possibility to develop terminal without appropriation of the land for public needs?• Land prices• Is territory planning needed?• Land purpose• Needed works• Other elements
2. Infrastructure
<ul style="list-style-type: none">• Distance to railway station• Water, electricity, sewerage• Alternative access road density and quality• Existing railway traffic management infrastructure• Existing cargo handling equipment• Existing buildings / warehouses, which can be used
3. Distances to roads and operators
<ul style="list-style-type: none">• Distance to Transport Corridor• Distance to highway A1• Distance to airport• Distance to the existing container terminal• Distance to existing custom warehouse• Distance to public transportation• Number of logistics companies 7km radius
4. Environmental Impact
<ul style="list-style-type: none">• Is it needed environmental impact assessment?• What is the need for further land/soil analysis?

Multi-Criteria Analysis
Source: Wagener

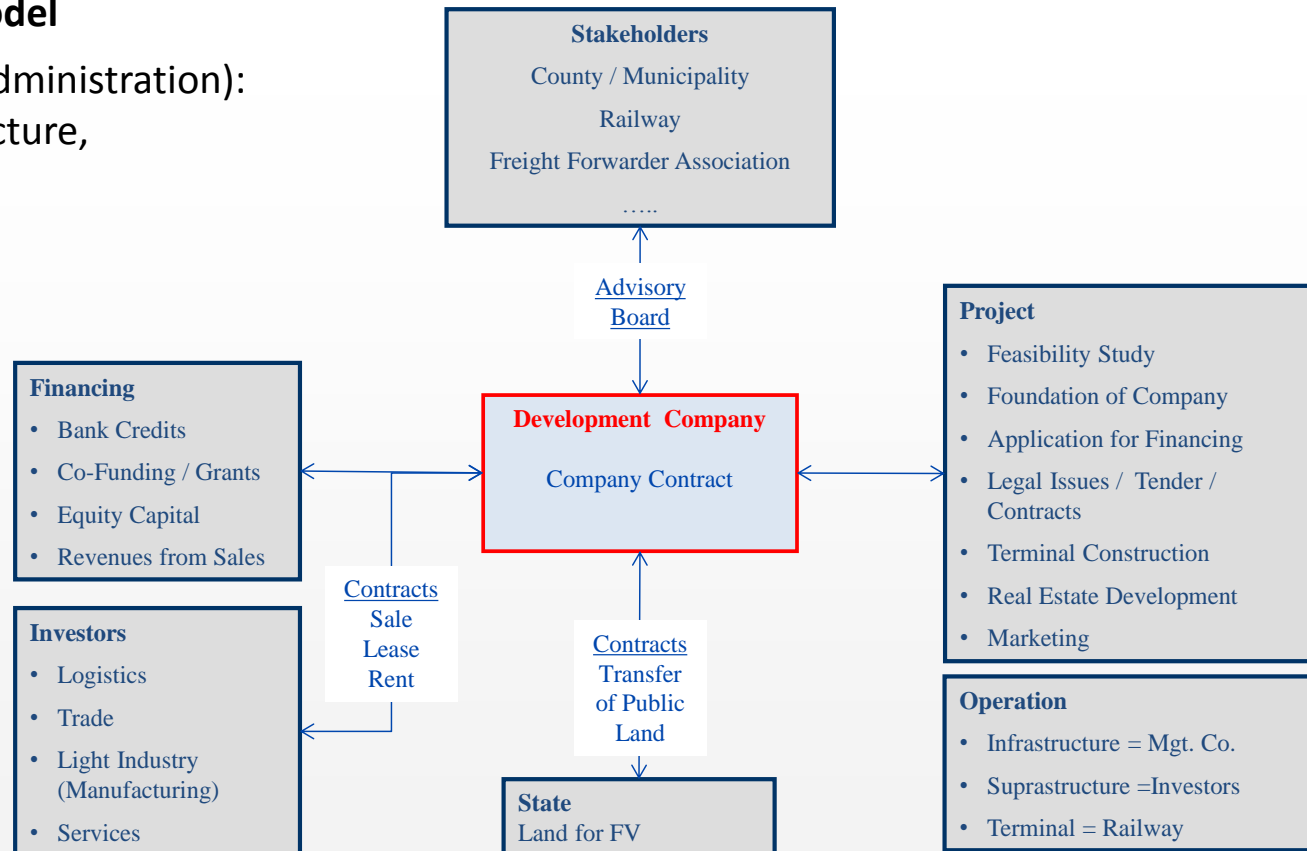
3. Challenges and Concepts for FV

Business and Financing Model

The development of a Freight Village needs a “driver” and involvement of stakeholders . In Europe FV’s are developed often in a PPP.

5. Business and Financing Model

- State (Municipal or Port Administration): investments into infrastructure, land development
- Private sector: purchase of land plots, investments into supra-structure.
- Revolving financing scheme in phases: invest and sale of land plots
- Active management of land plots to ensure “synergetic neighbourhood”



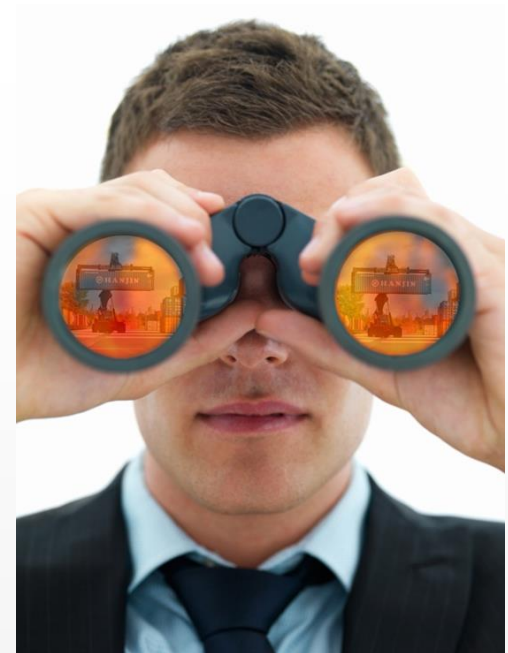
Source: developed on the basis of E&Y and W&H

4. Future Trends

Innovation and Collaboration

The concentration of logistics companies in logistics centers promote innovation and collaboration.

- Innovative handling technologies for non cranable trailers
- Emission free city logistics and electro mobility
- Freight Exchange platforms
- Security solutions
- Telematics solutions
- Digitalization of supply chains and information platforms
- Collaboration of Freight Villages
- New train concepts (mixed trains, more public trains, fresh food corridors, ...)



Source: LNBB

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