

Cargo Transport Flows and Potential Logistical Services in the North and Baltic Sea Region

Presentation of Final
Findings from Port-Net
Study 3-4

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Dipl.-Geograph



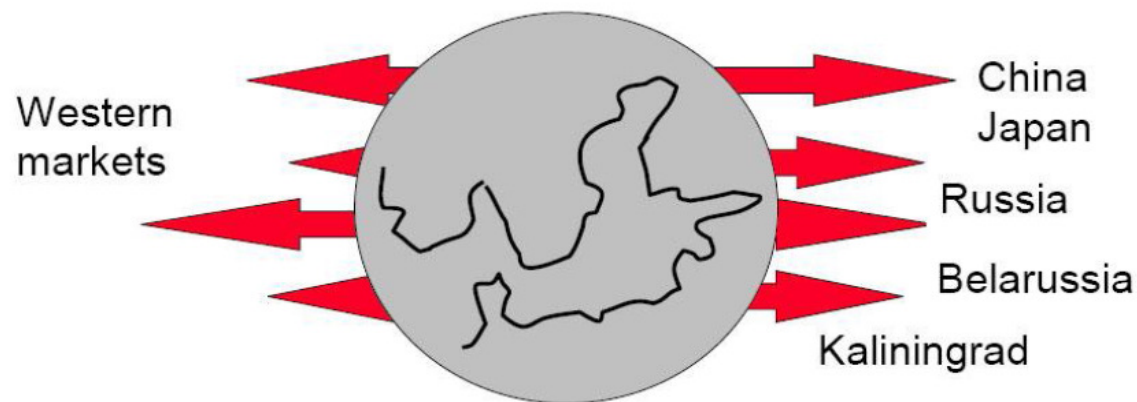
Outline



1. Initial Perspective, Questions
2. Port-Net Navigator
3. Overall Cargo Flows
4. National/Regional Cargo Flows
5. Cargo Flows of Industries/Companies
6. Logistics Services
7. Competitive Advantage of Ports

Initial Perspective

- 17% of world trade and 30% of EU-exports are handled in BSR (2005)
- Tenfold increase by 2025
- Pressure on logistical networks
- Increasingly homogenous trading ground but limited capacities



Initial Questions

- Underlying question: How can cargo flows be supported and regional strengths/capacities widened?
- Analysis of cargo flows:
 - How are cargo flows structured?
- Analysis of logistical services:
 - Which companies are involved?
 - Which products are/could be serviced?
 - What is needed in supportive value addition?
- Not answered: Which company is shipping what kind of goods from where to where?

Data and Regional Scope



- Wholistic approach includes:
 - NUTS classification
 - Product classification
 - Port records
 - Company classification
- Combination of quantitative and qualitative data i.e. case studies

A Geographical-Visualization System

- Data on supply chains and its cargo flows is always related to regions
- Visualizing such data simplifies pattern identification
 - Identification of lines of development
 - Advantages for decision making process
- The „Port-Net Navigator“ provides a prototypical approach
 - to visualize cargo flows and
 - to show possibilities in business intelligence



Port-Net Navigator Software Application

- Prototype
- Build on latest visualization technology in Macromedia Flash environment
- Data integration via XML, database driven
- Suitable for internet and standalone use
- Adaptable and extendable

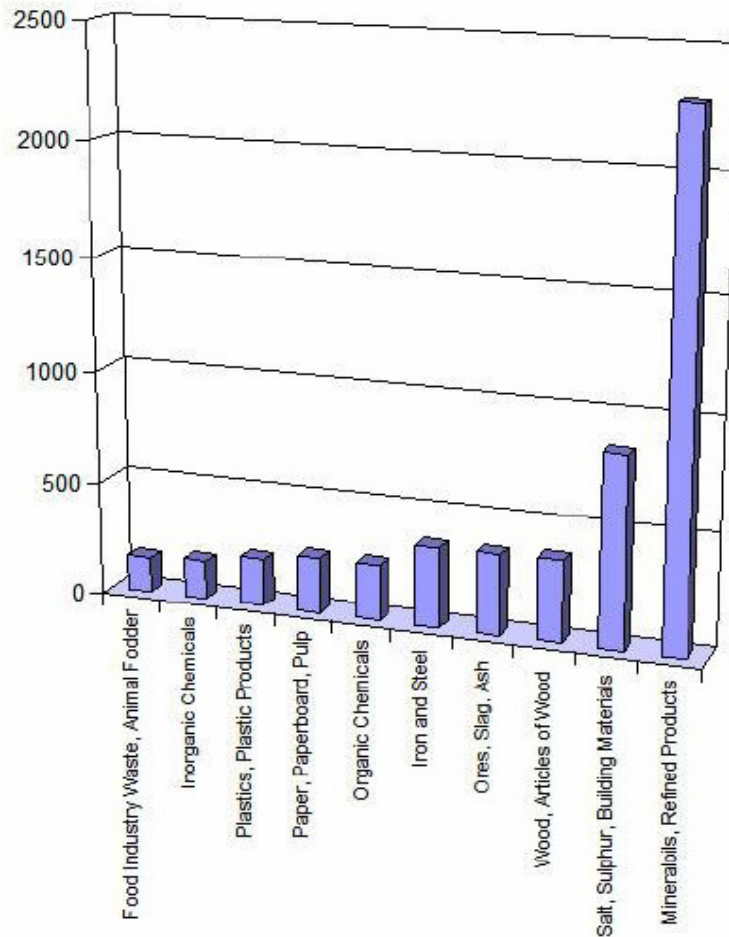


Port-Net Navigator

→ Layout

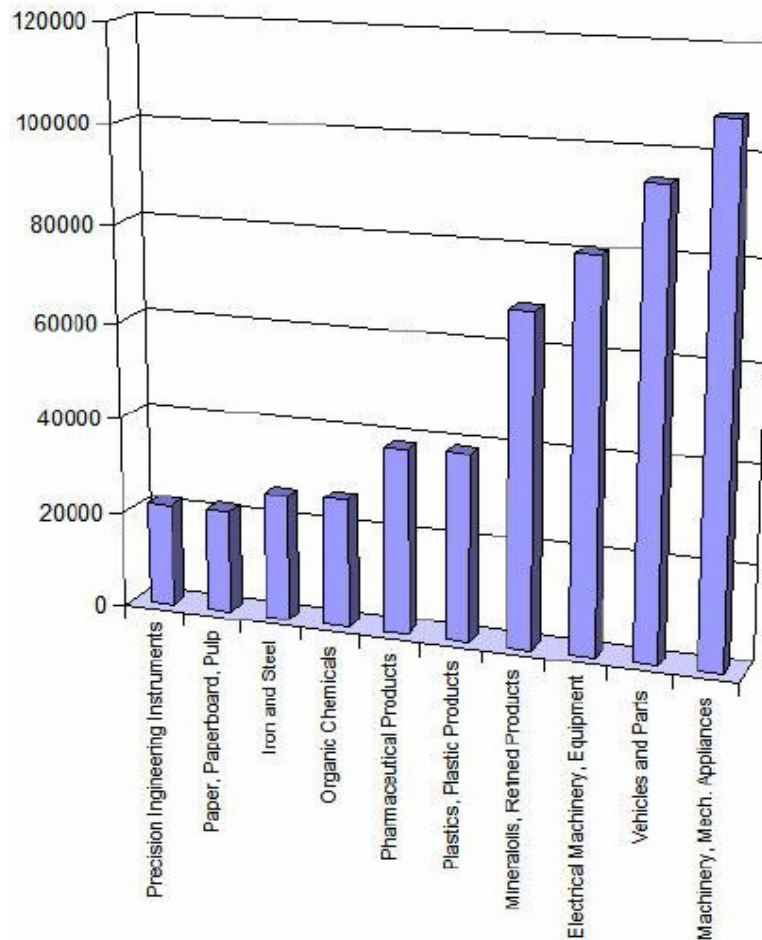


Exports within the Region (2005, mil. t.)



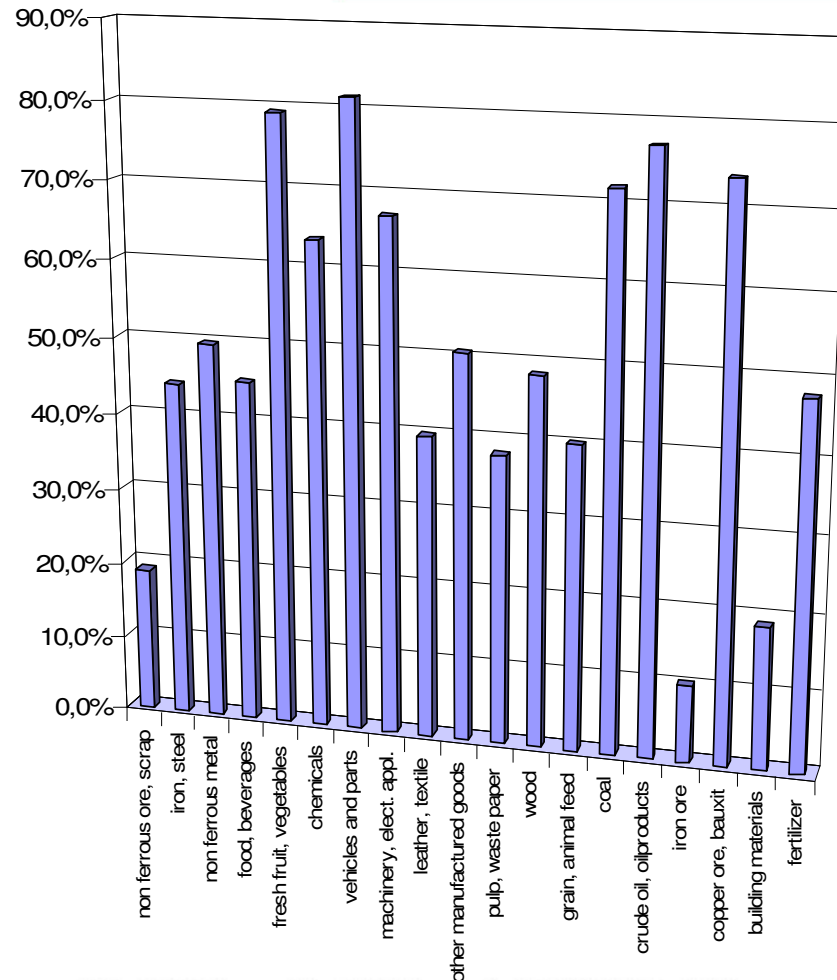
1. Mineral oils and refined products
2. Building materials
3. Wood and articles of wood
4. Ores, slag and ash
5. Iron and steel
6. Organic chemicals
7. Paper, paperboard and pulp
8. Plastics

Exports within the Region (2005, mil. €.)



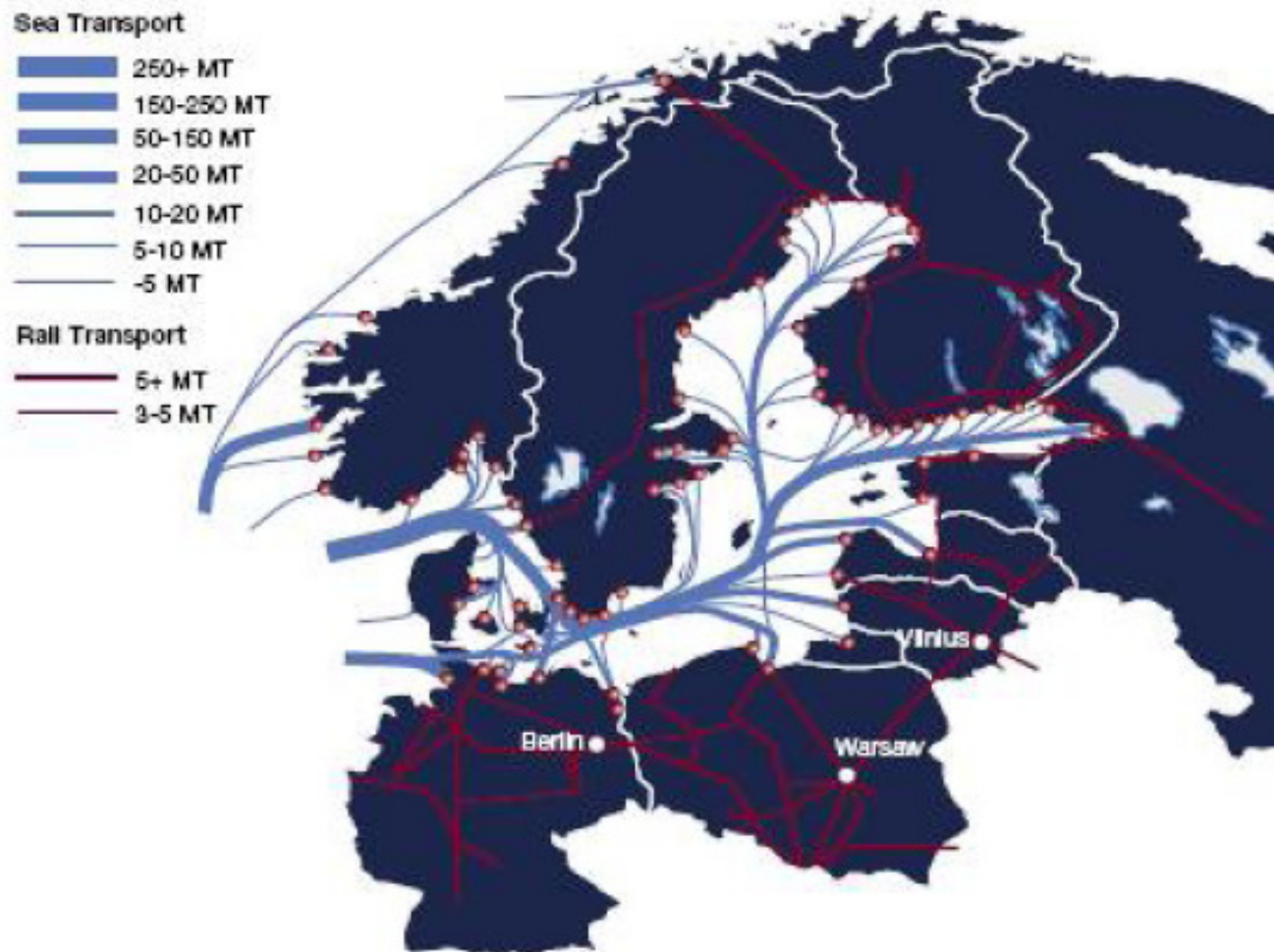
1. Mechanical machinery
2. Vehicles and parts
3. Electrical machinery
4. Mineral oils and refined products
5. Plastics
6. Pharmaceutical products
7. Organic chemicals
8. Iron and steel

Commodity Forecast (2003-2020 for Turnover in t., Growth Potential in %)

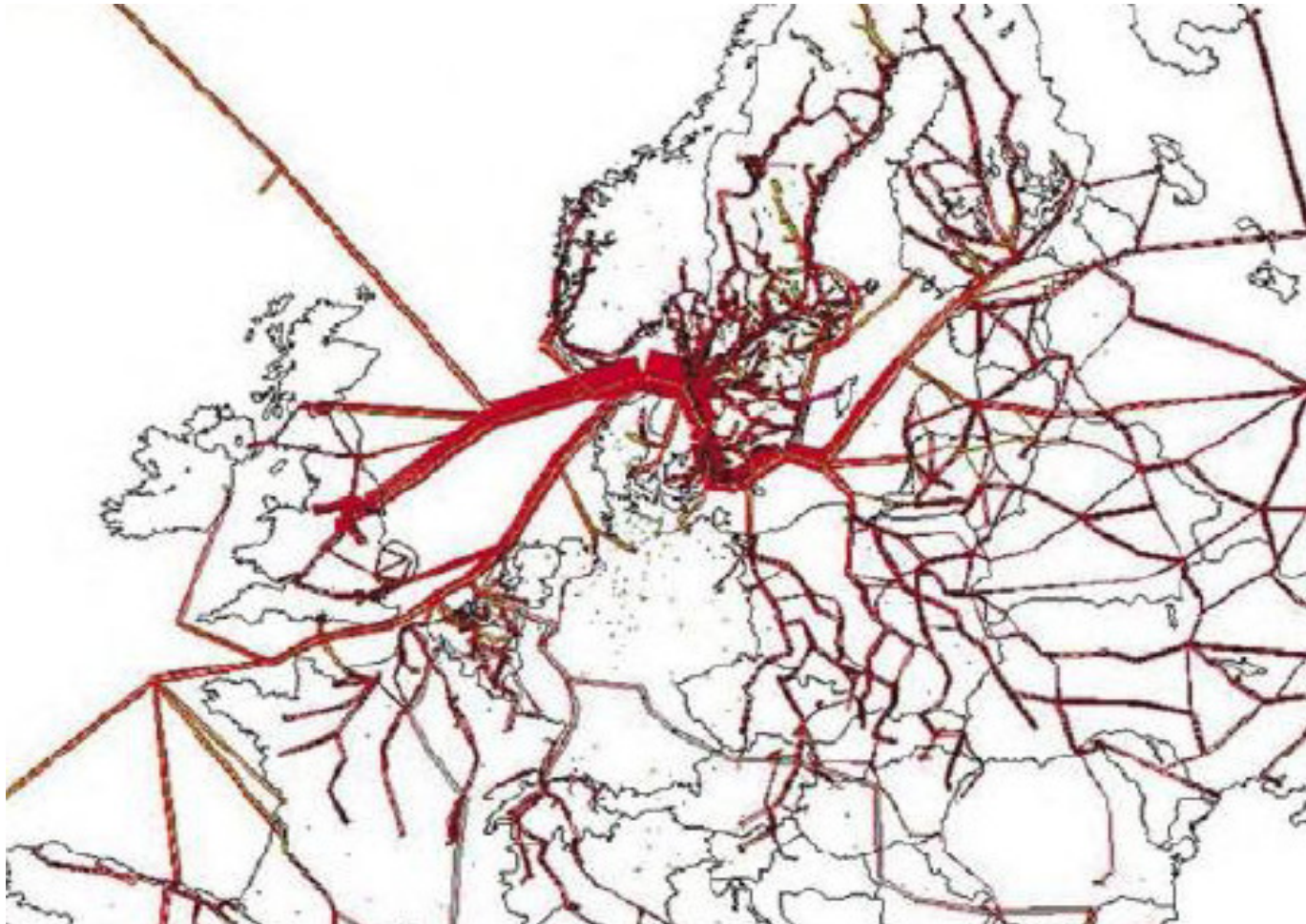


1. Vehicles and parts
2. Fresh fruit and vegetables
3. Mineral oil and refined products
4. Copper ore and bauxit
5. Coal
6. Machinery and electrical appliances
7. Chemicals
8. Other manufactured goods

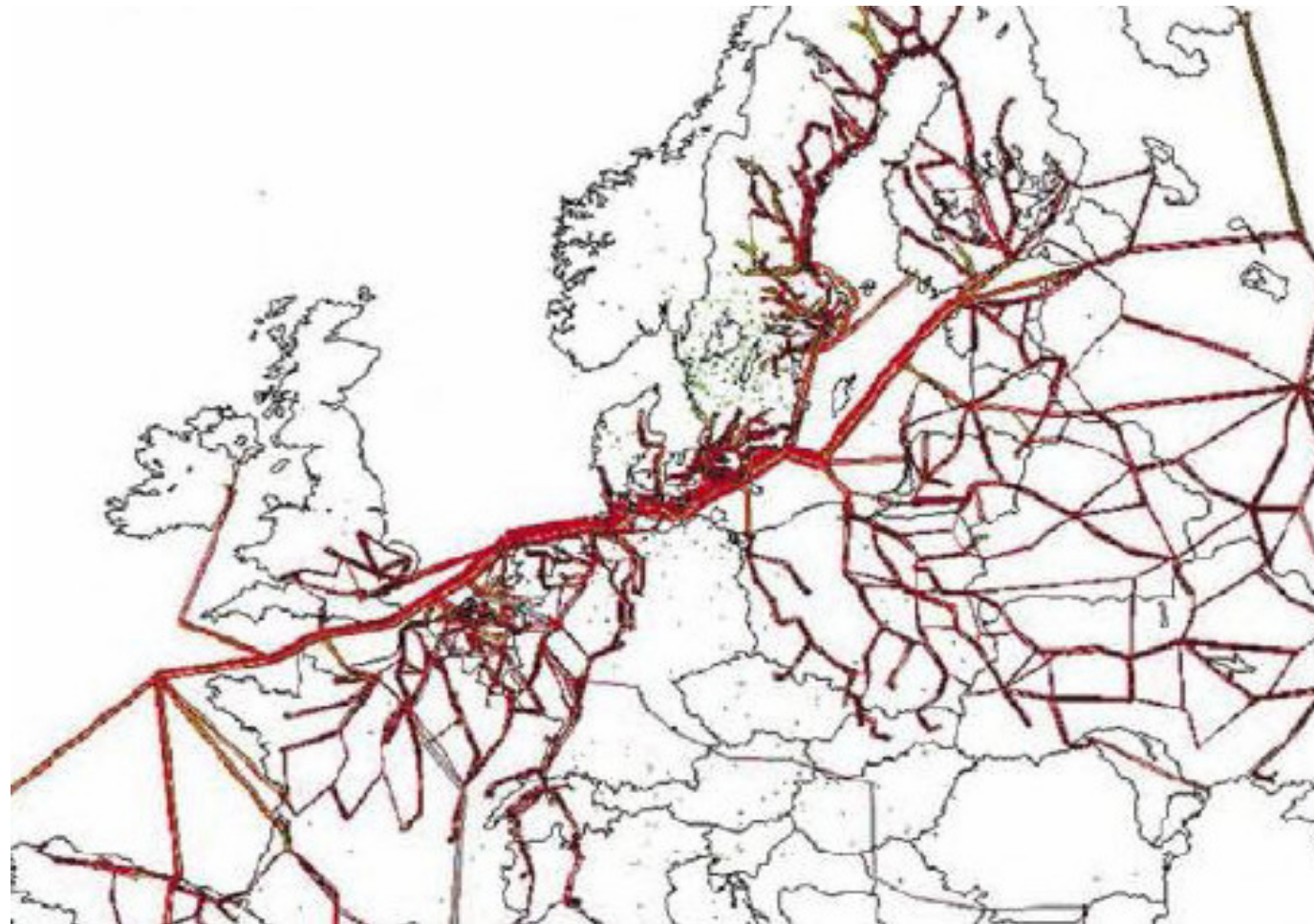
Sea and Rail Routes in BSR, All Cargoes, Major Ports 2003



Transport Intensity via Skagen by 2020

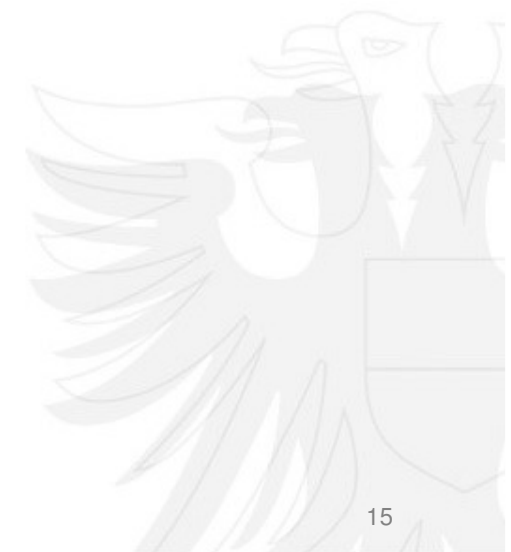


Transport Intensity via Kiel Canal by 2020

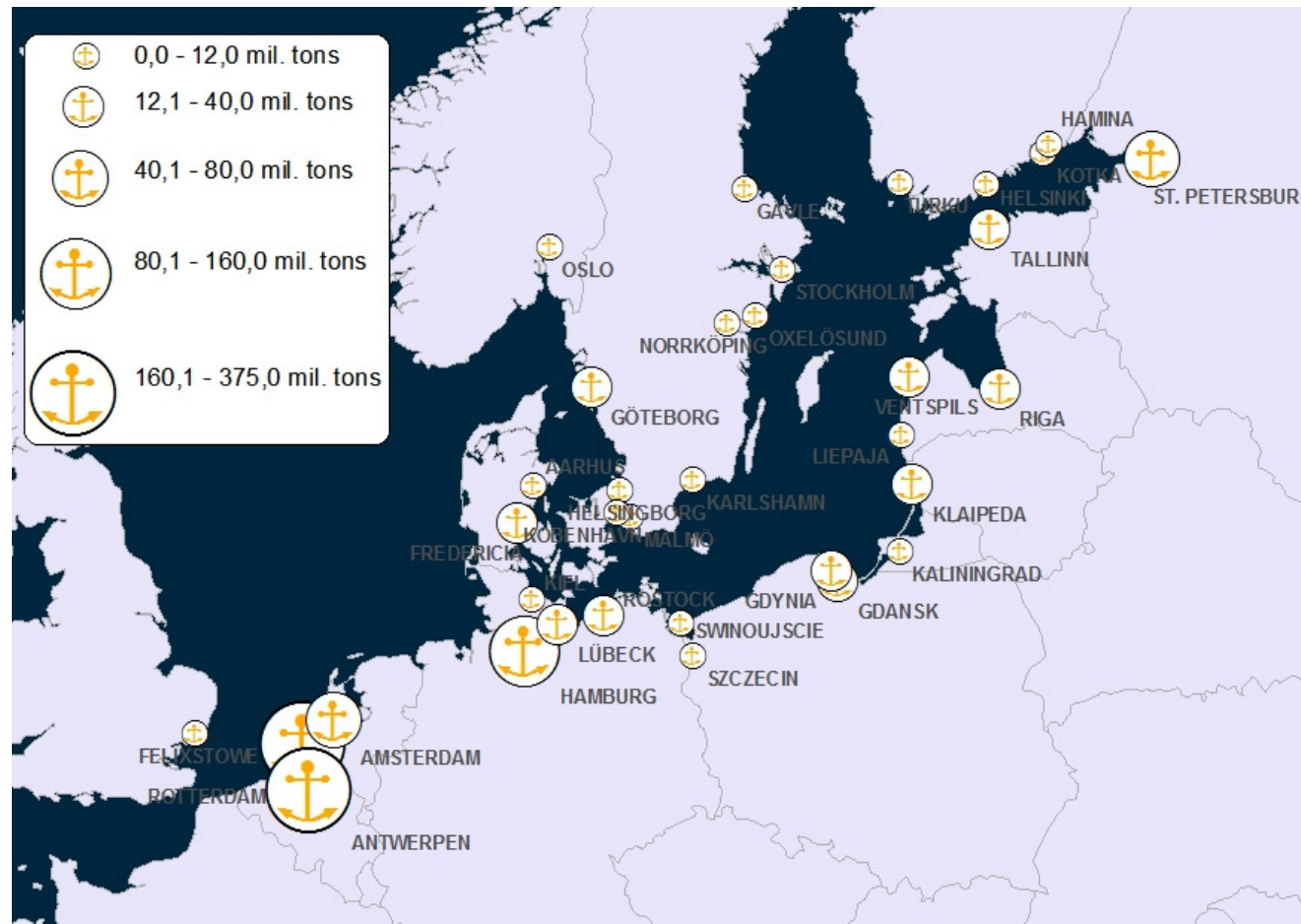


Port-Net Navigator

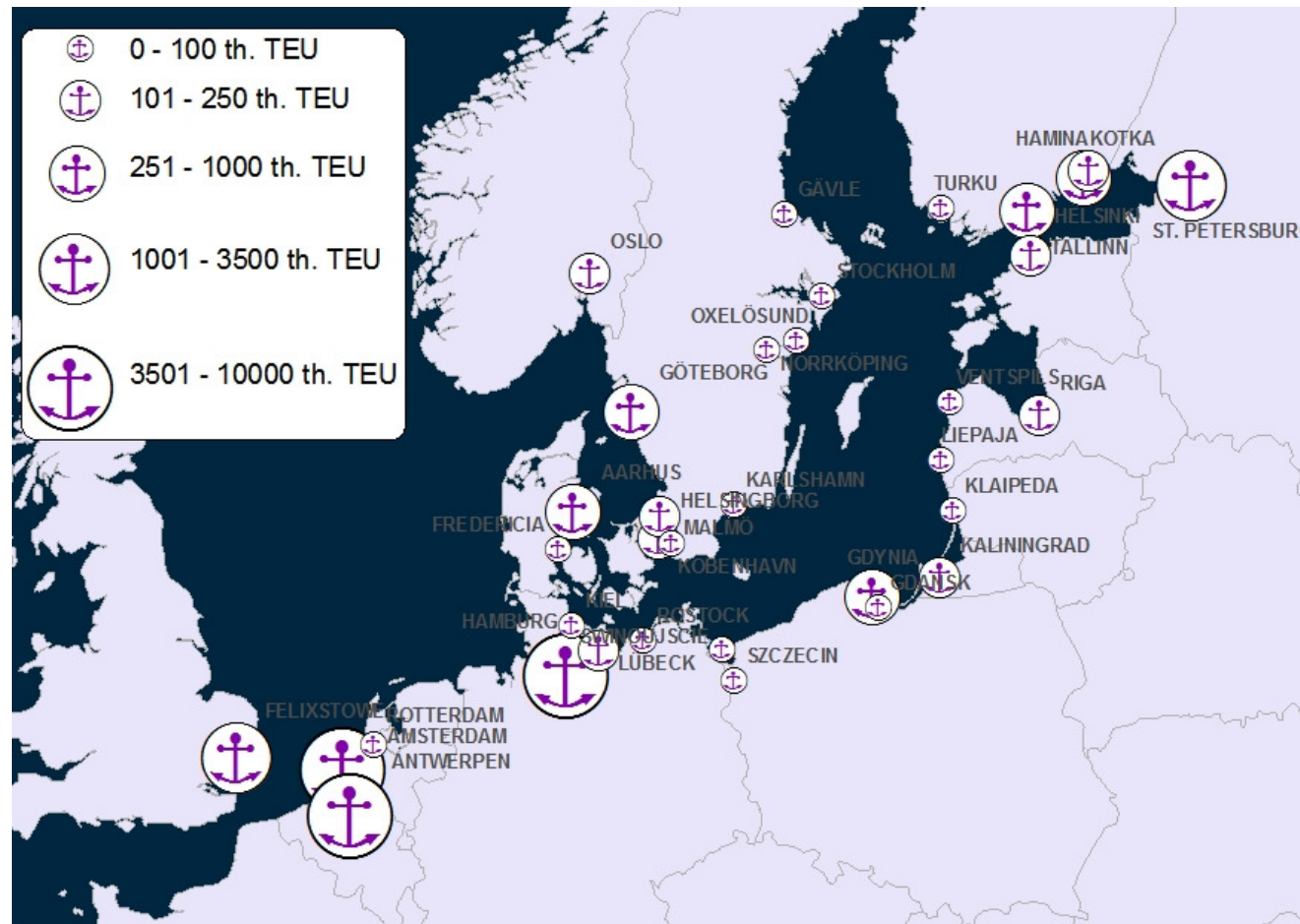
→ Cargo Flows



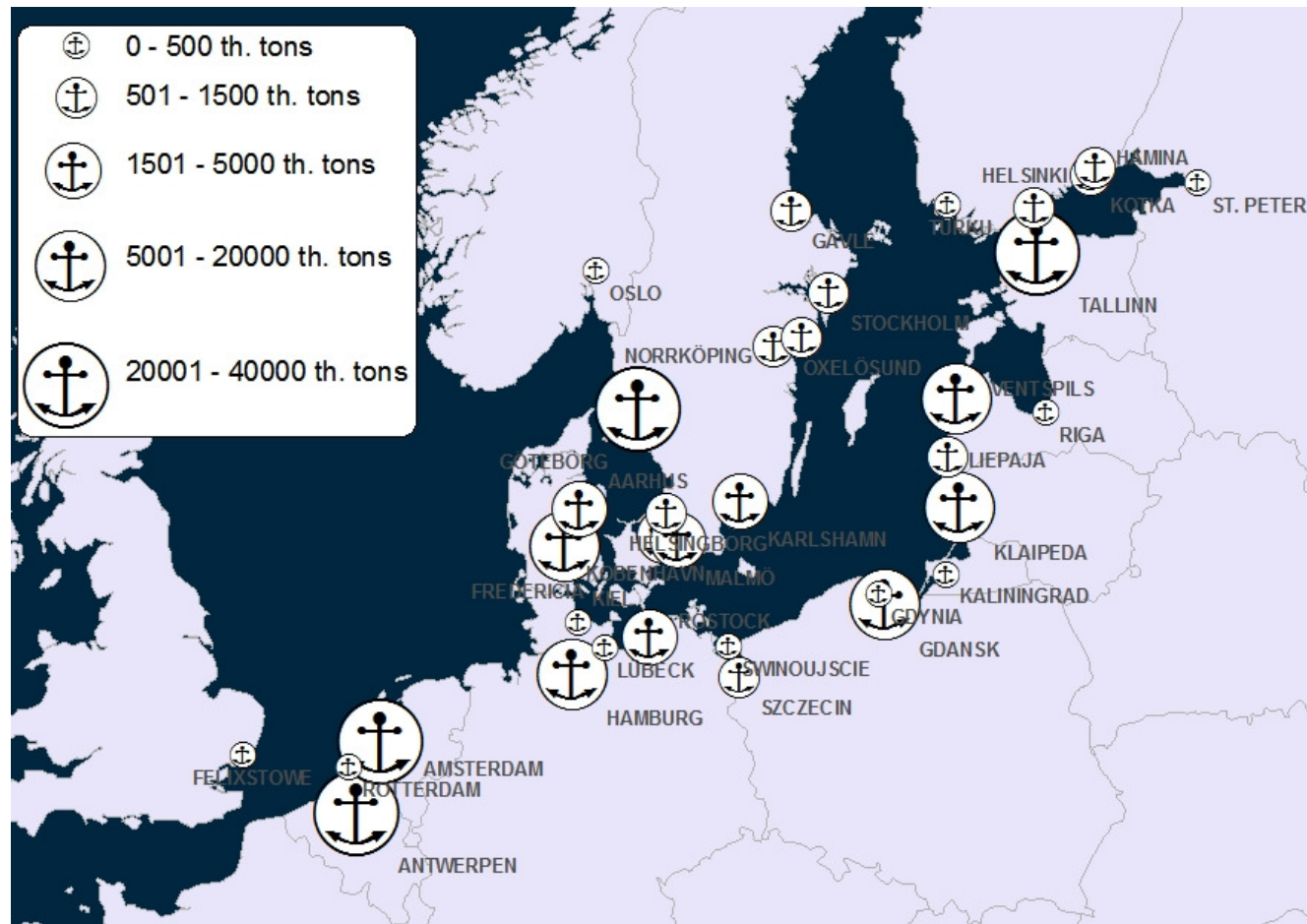
Major Evaluated Ports – Turnover 2005



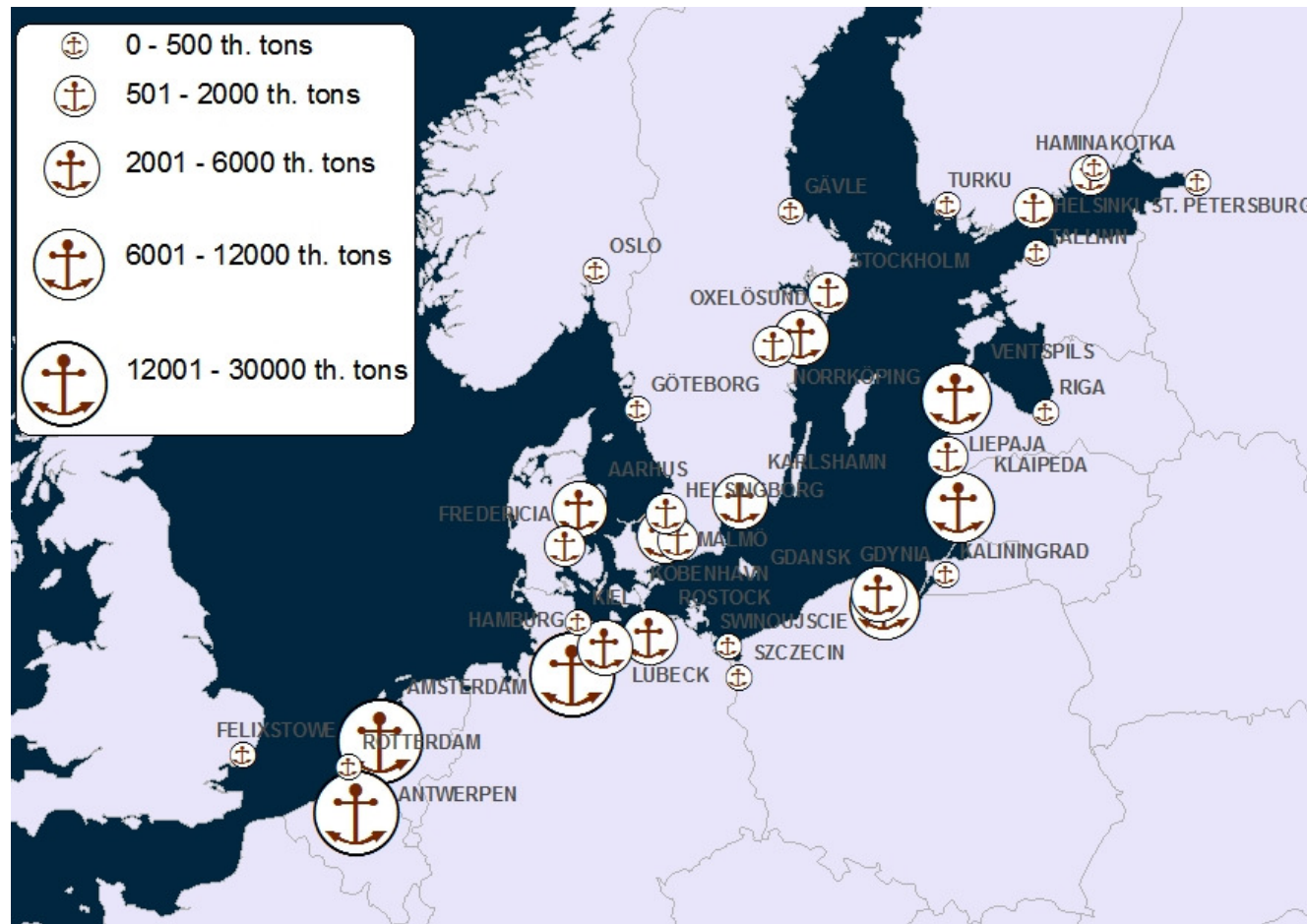
Major Evaluated Ports – TEU Turnover 2005



Major Evaluated Ports – Liquid Bulk Turnover 2005

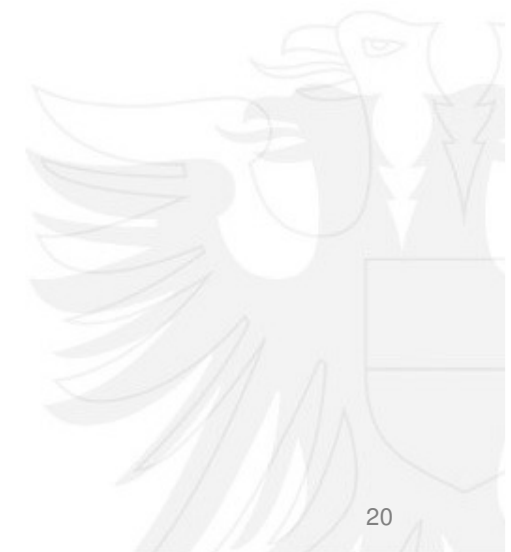


Major Evaluated Ports – Dry Bulk Turnover 2005

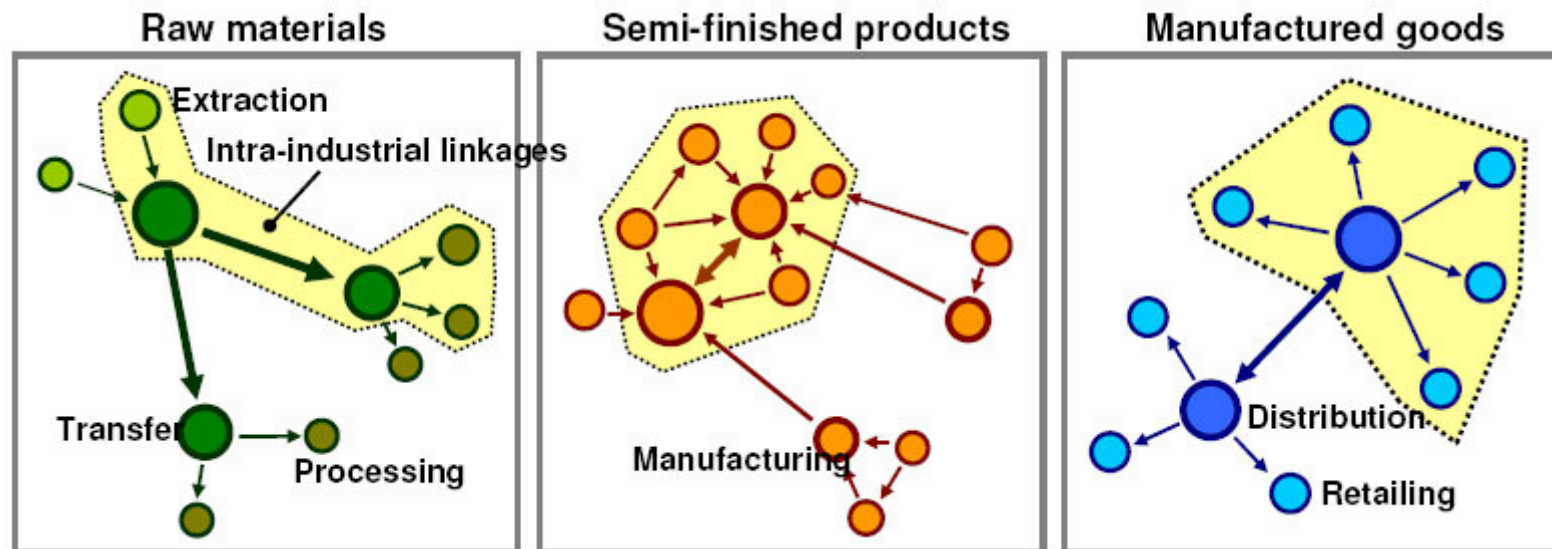


Port-Net Navigator

- Port Connections
- Logistic Services



Production System and Types of Transported Freight



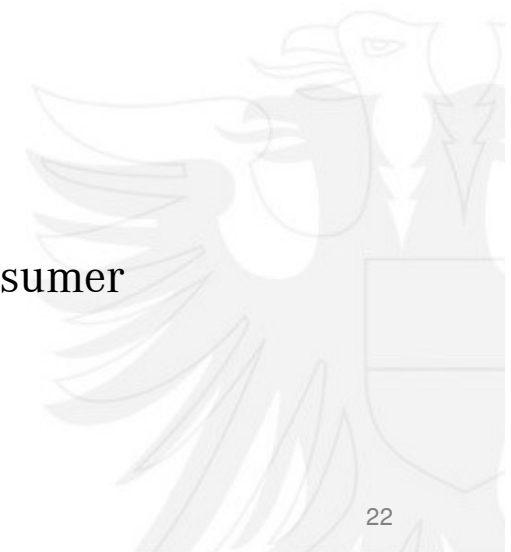
- Differing views on
 1. status of product,
 2. needed services and
 3. included acteurs

Logistical Trends in the Region - 1

- Restructuring of logistical systems by spatial concentration of production
 - a. reduction in plant numbers
 - b. increased plant specialization
 - c. spatial concentration of inventory

- Realignment of supply chains by
 - a. wider geographical sourcing of supplies
 - b. wider distribution of finished products and
 - c. concentration of international trade to hub ports

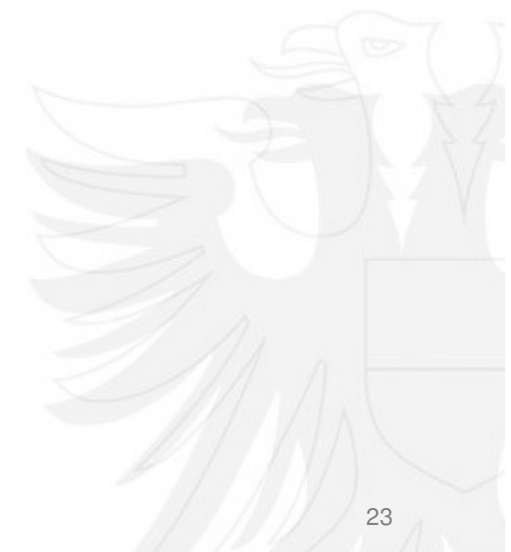
- Rescheduling of product flow by
 - a. adoption of Quick Response and ECR (Efficient Consumer Response) in retail distribution and
 - b. concentration of international trade to hub ports



Logistical Trends in the Region - 2

- Changes in management of transport resources by
 - a. improvement in transport's relative cost/performance
 - b. increased use of outside transport / distribution contractors
 - c. changes in vehicle size regulations
 - d. changes in handling systems and
 - e. combination of transport modes towards intermodal transport chains

- Changes in product configuration/design by
 - a. increase in complexity and
 - b. sophistication of product

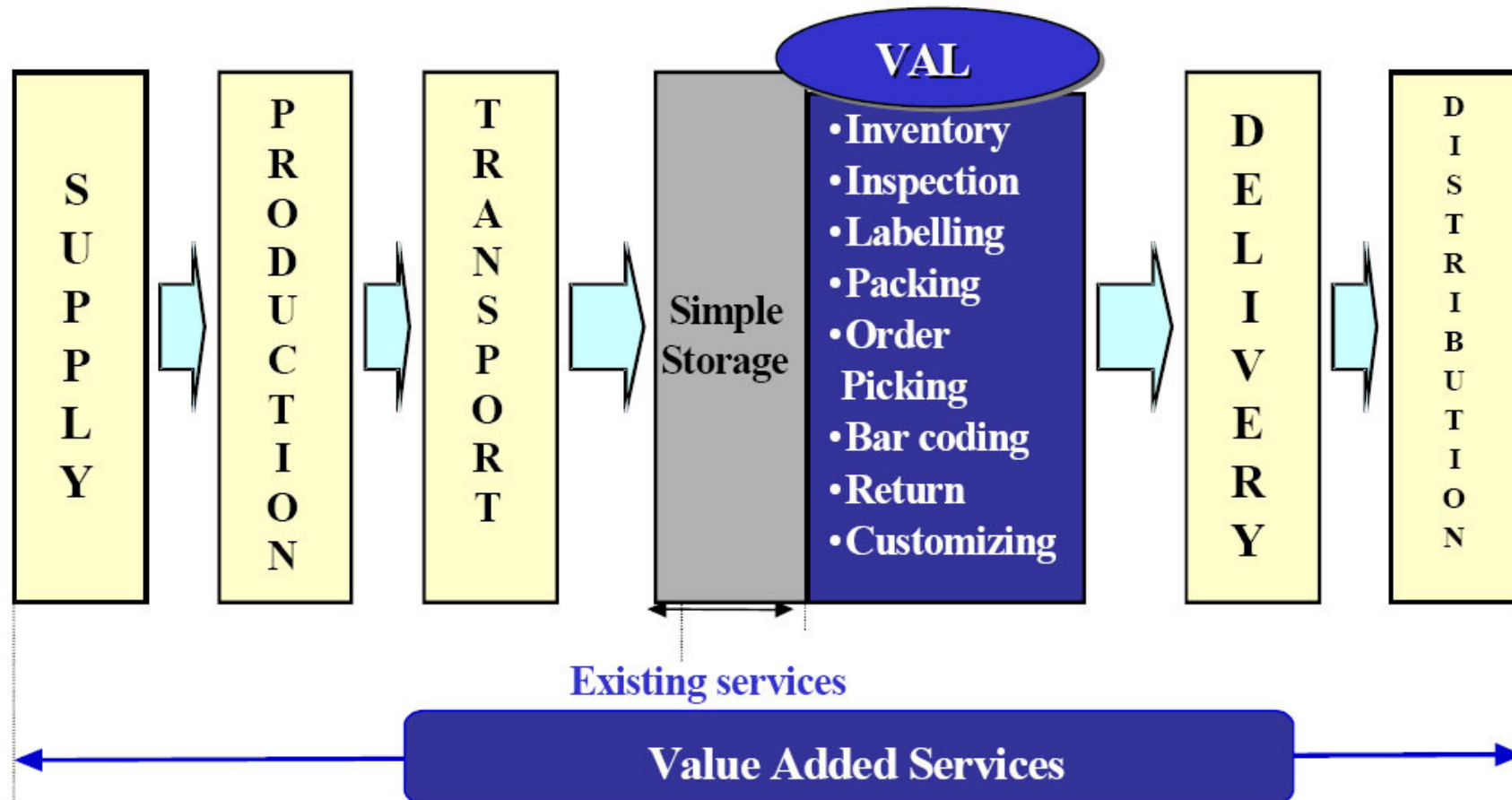


Categories of Logistic Services

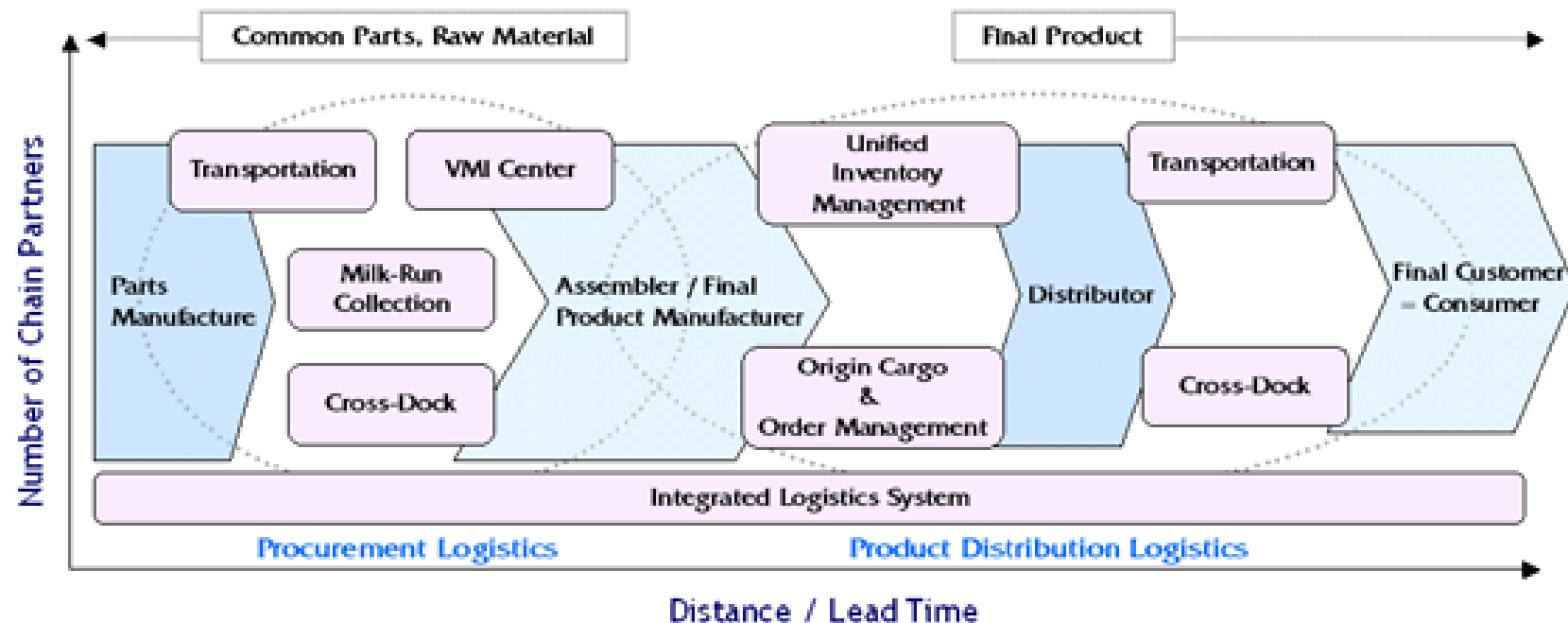
- Transport
- Warehousing
- Materials handling and packaging
- Order handling and customer service
- Prognoses
- Production planning
- Purchasing and materials management
- Other activities



Original Point of VAS



Integration Production/Supply Chain




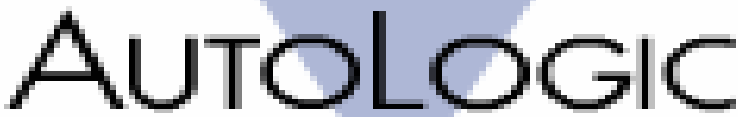
Diversity of Services

- Packaging
- Specialist or niche services
- Localizing and customizing
- Time reliable services
- Assembly
- Repacking
- Refurbishment
- Installation and instruction
- Quality control and testing of products
- Packaging return services
- Product training on customer's premises
- Bonded exhibition
- Cargo related services

→ Example Automotive VAS



VAS Example - Autologic

AUTOLOGIC

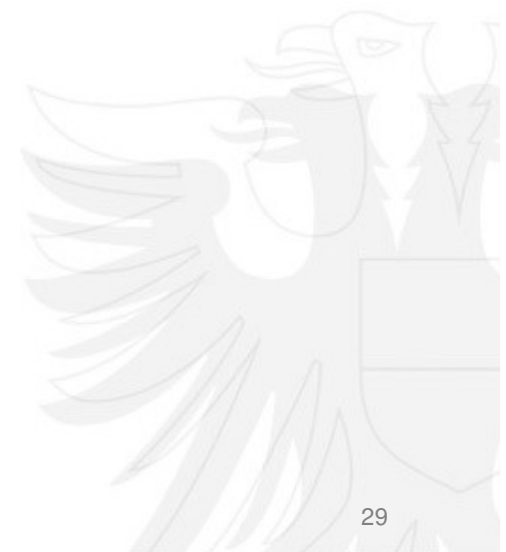
**This is what we mean by
'Finished Vehicle Logistics'...**

Continue



EDI and VAS

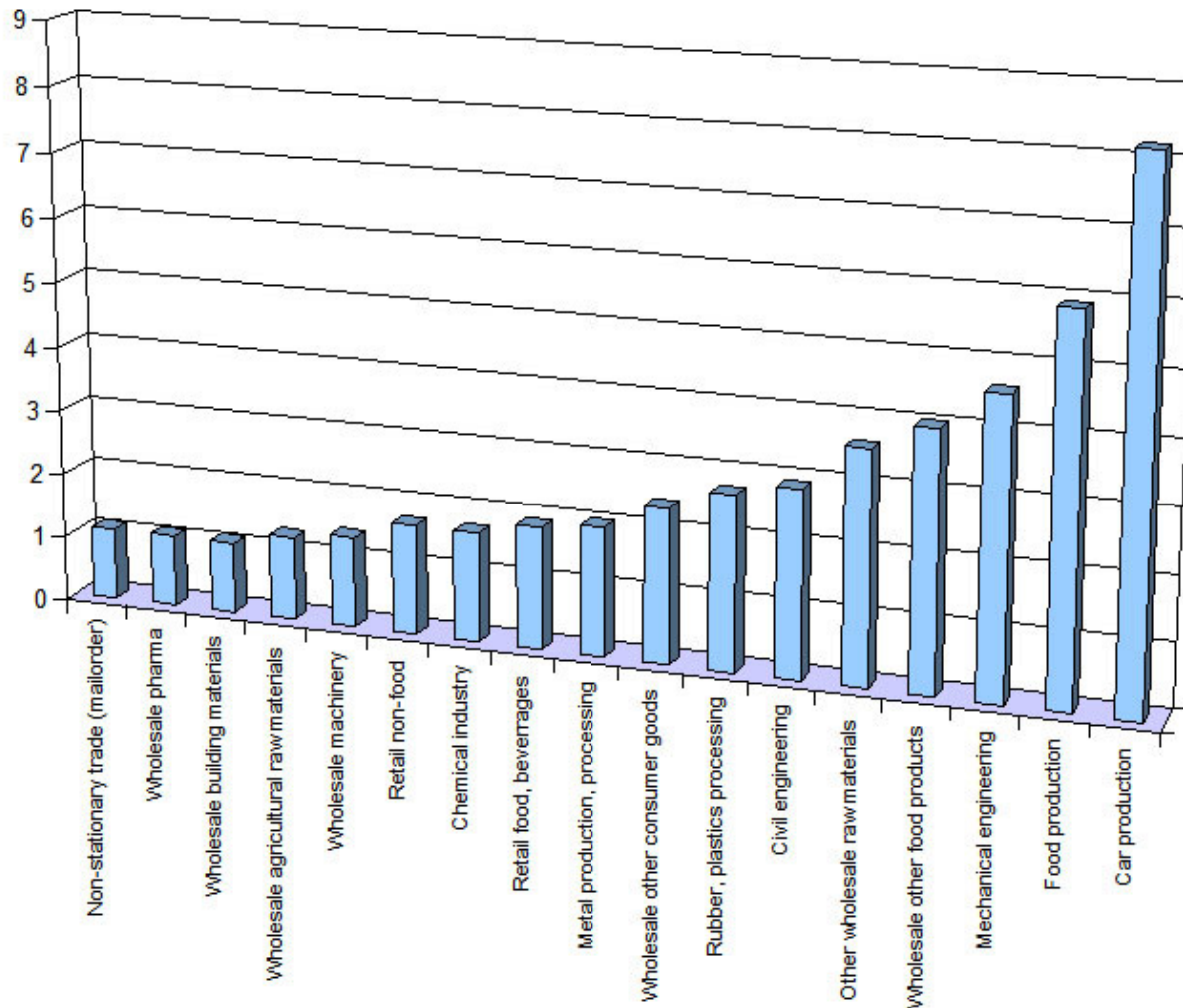
- Used for almost any transaction in logistics
- Can be seen as VAS depending on service
- Business capital
- Formalization
 - In general (protocol standards)
 - Industry specific (i.e. EDIFACT)
 - Standards open markets for LSPs
- Development supported by RFID



Possible Solution: Contract Logistics

- the integration of several logistical functions into one complex package of services (including not only transport, storage or order processing),
- the individual design of logistical services developed for the needs of the shipping company and
- long-term contract security (at least one year contracts between service provider and the shipping company in written form in contrast to transaction-based business connections).

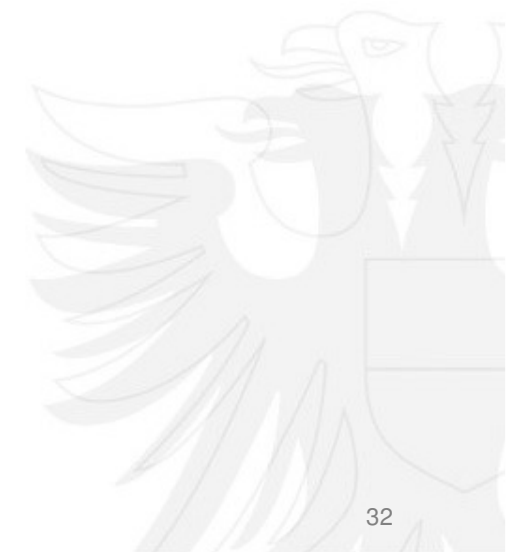
Potential for Contract Logistics in Germany in Billion € (based on 2005 figures)



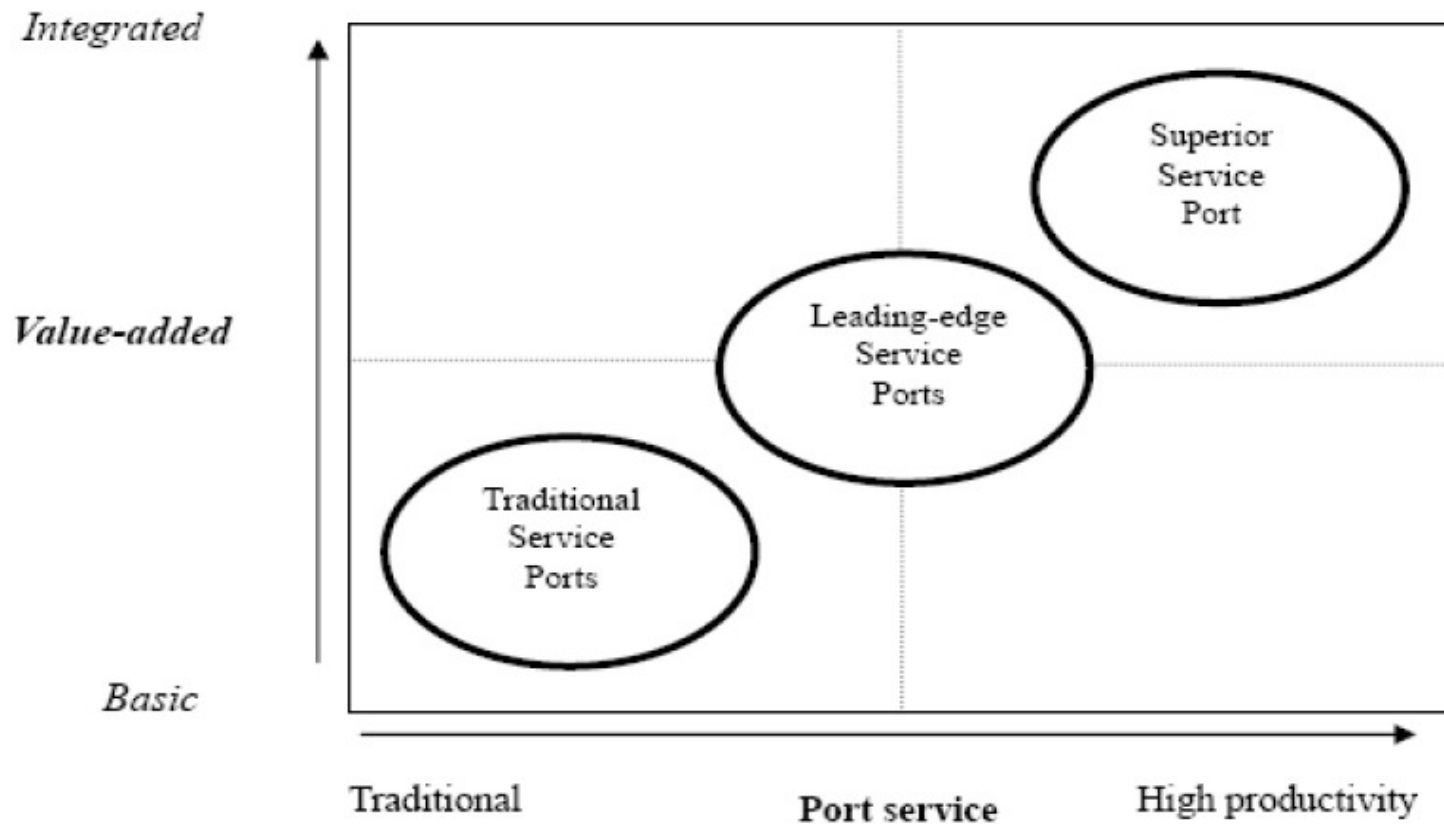
1. Car production
2. Food production
3. Mechanical Engineering
4. Wholesale food products
5. Wholesale raw materials
6. Civil engineering
7. Rubber, plastics processing
8. Wholesale consumer goods


Port-Net Navigator


→ Industry Distribution



Matrix of Competitive Advantage for Ports





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