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INSTITUTE OF TRANSPORT AND MARITIME MANAGEMENT ANTWERP

Universiteit Antwerpen

Rhine-Scheldt Delta Port Region, the advantages of a logistics mega cluster

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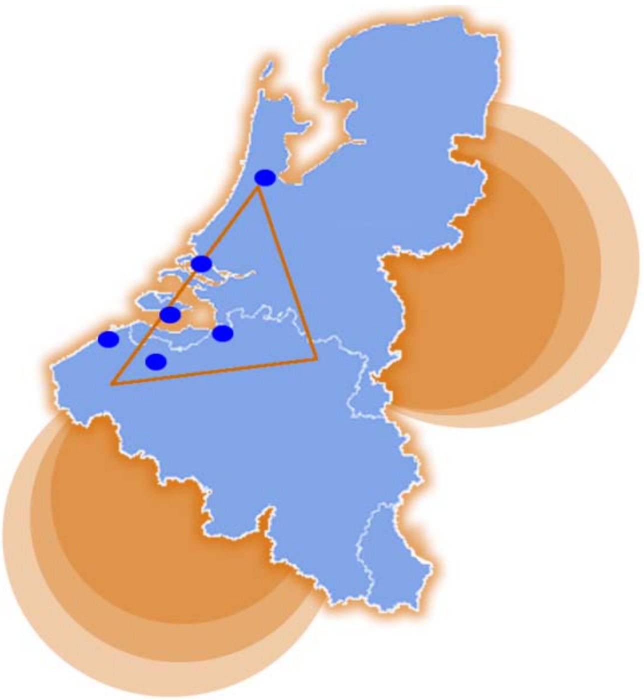
- Based upon 3 ING publications:
  - Economic Analysis of the Rhine-Scheldt Delta Port Region
  - Economic Analysis of the Warehousing & Distribution Market in Northwest Europe
  - Economic Analysis of Breakbulk flows and activities in Belgian ports

- Authors: Indra Vonck & Theo Notteboom (ITMMA, University of Antwerp, www.itmma.ua.ac.be)
- For further information on the services of ING Bank in transport and logistics, please visit www.ing.lu
- Other recent ITMMA/ING studies:

General information

The Rhine-Scheldt Delta



One of the largest logistics clusters in the world with unparalleled cargo consolidation power

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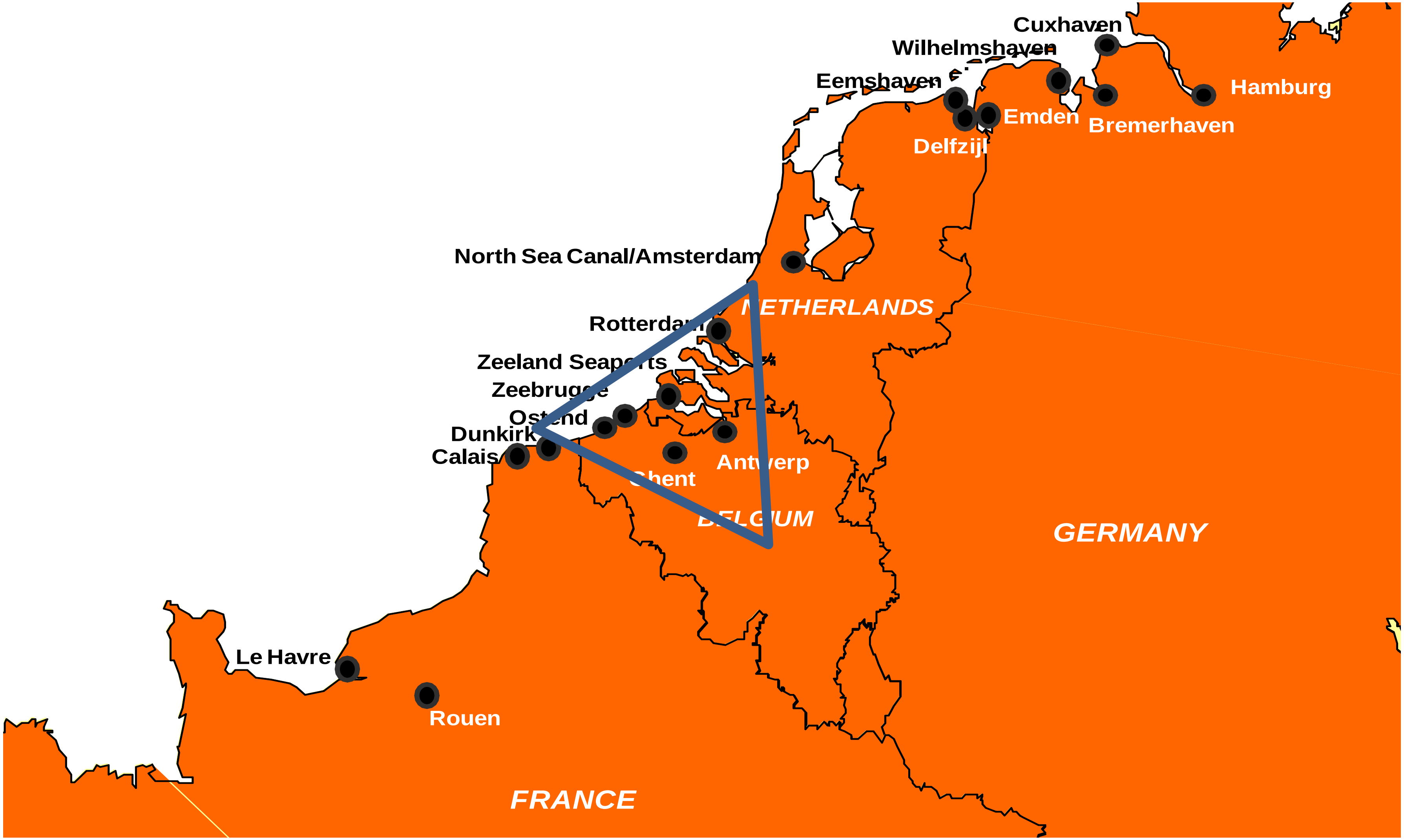
The Hamburg – Le Havre range



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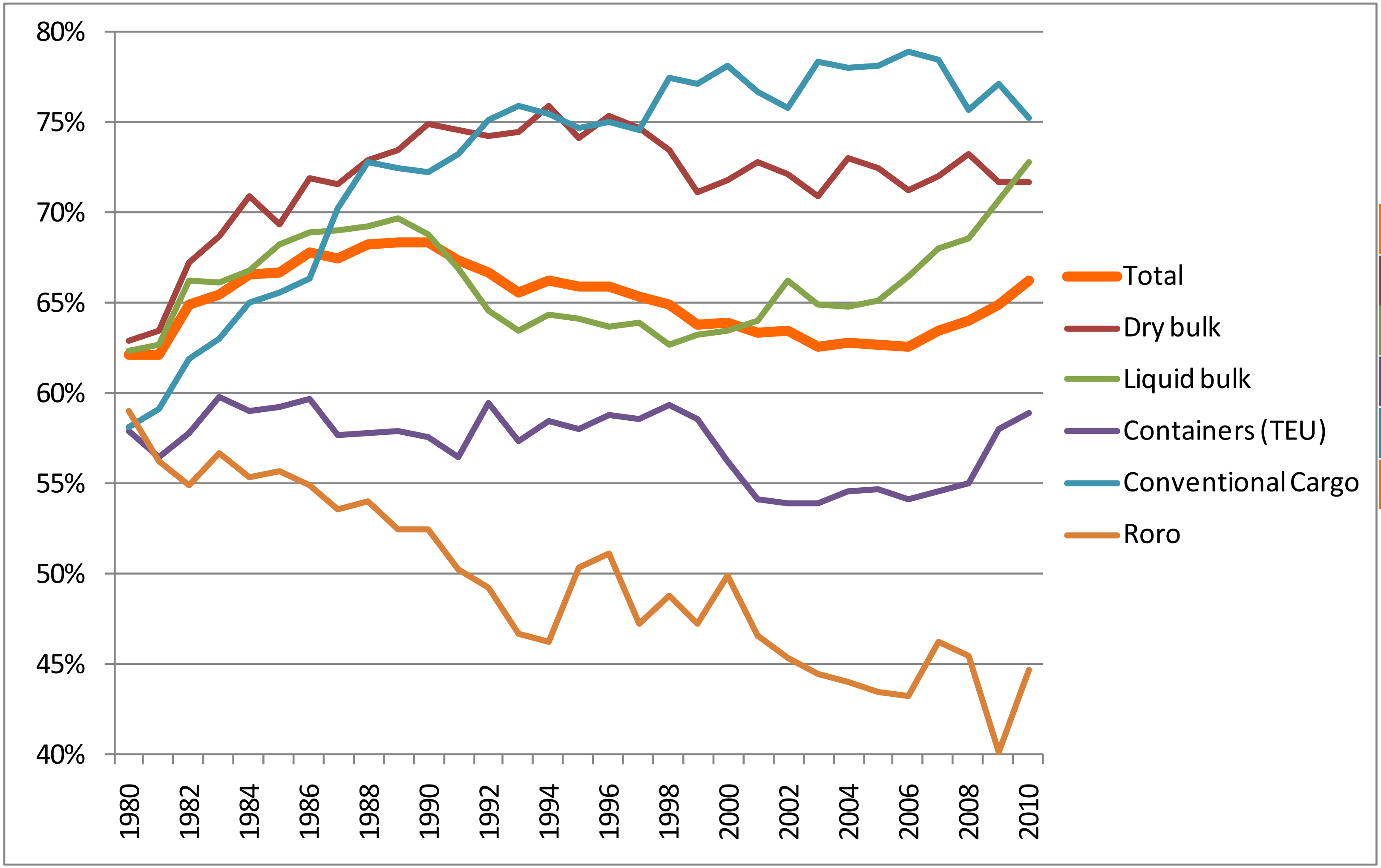
Traffic position of Rhine-Scheldt Delta in Hamburg-Le Havre range



Share 2010

Total	66.3%
Dry bulk	71.7%
Liquid bulk	72.8%
Containers (TEU)	58.9%
Conventional Cargo	75.3%
Roro	44.7%

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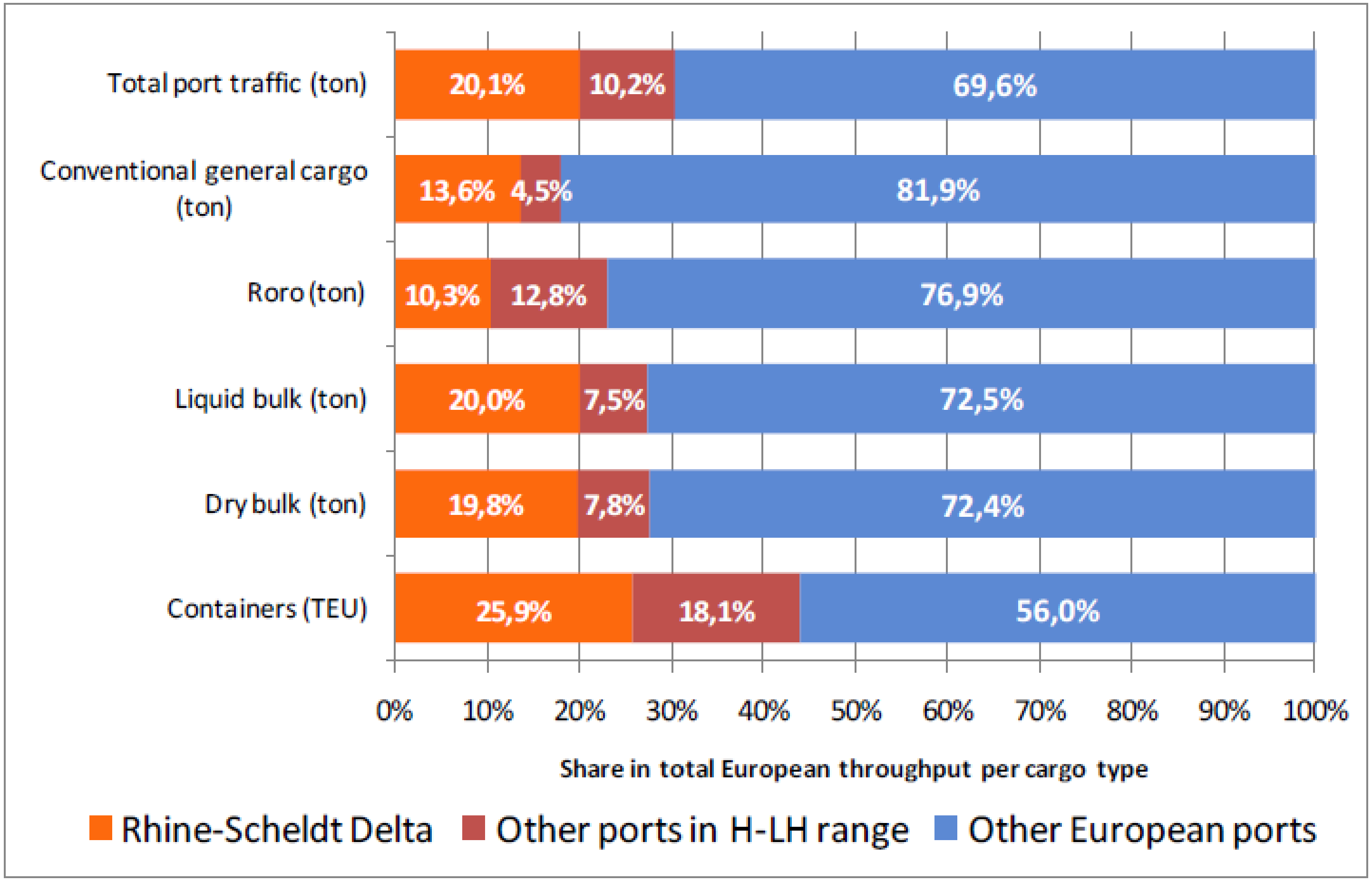
Traffic position of Rhine-Scheldt Delta port region in the European port system



Rhine-Scheldt Delta port region is the leading European port region in terms of cargo volumes

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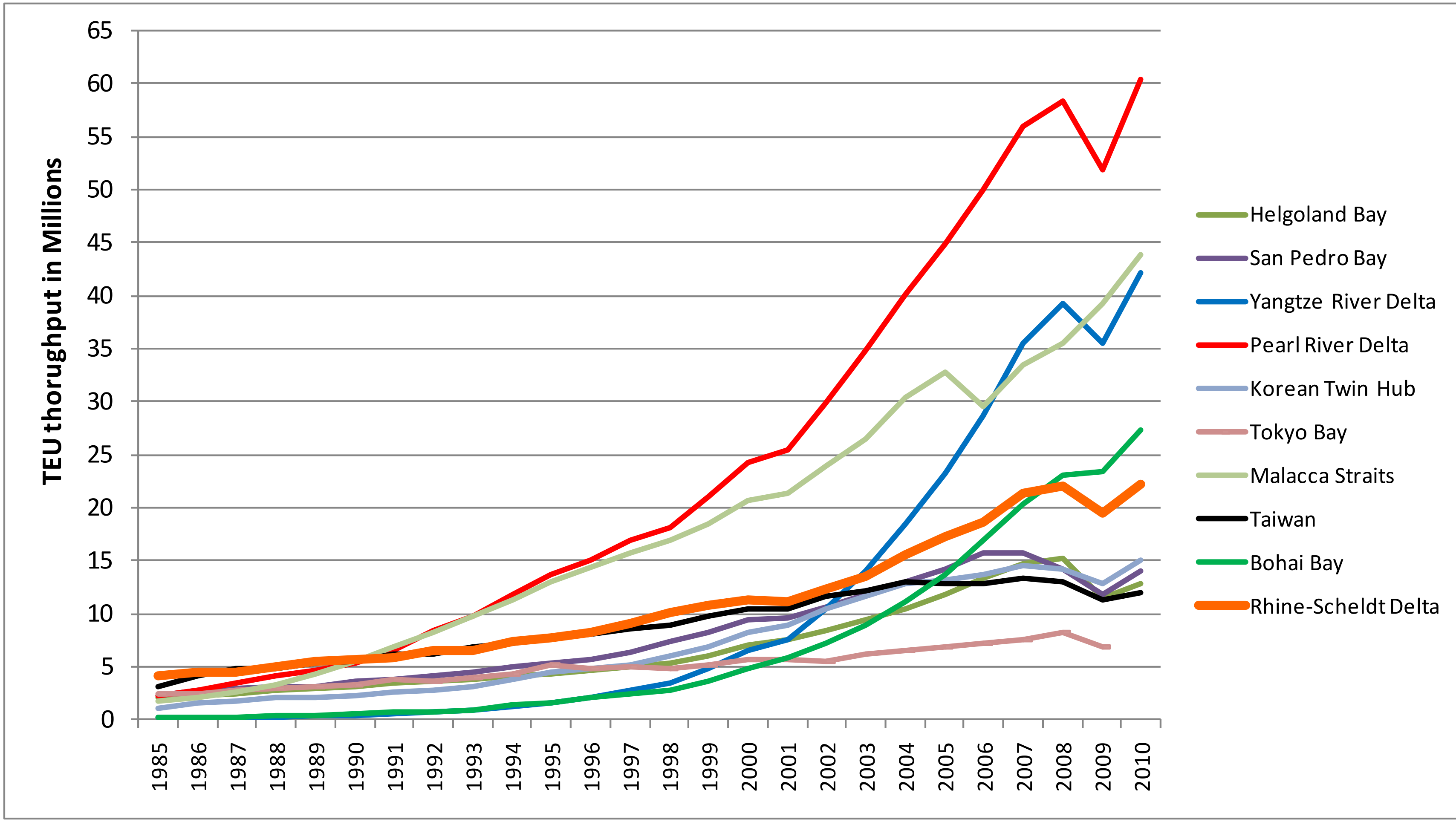
Container traffic of 22.3 million TEU:
5th container port region in the world



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The economic significance of the Rhine-Scheldt Delta ports

- No unique standard methodology in the Rhine-Scheldt Delta => the figures for Flemish and Dutch ports can not be compared on an equal basis

National Bank of Belgium on four Flemish seaports (2009):	'Port Monitor' on Dutch sea ports (2009):
Direct value-added = 13 billion euro or 4.3% of total Belgian GDP Indirect value-added = 14.1 billion euro Direct employment = 105,000 jobs or 2.7% of Belgian employment Indirect employment = 131,000 jobs	Direct value-added = 20.5 billion euro or 3.6% of total GDP of the Netherlands Indirect value-added = 11.9 billion euro Direct employment = 163,386 persons or 1.9% of total Dutch employment Indirect employment = 108,617 units Dutch seaports in Rhine-Scheldt Delta = share of about 95% of the above effects

- Impact spread over a wide geographical area and among a large number of international players
- Port-related industry remains very important

The strategic role of the ports in the Delta

- Seaports plays an essential role in (1) facilitating trade, (2) increasing the competitiveness of a nation or region and (3) they are assets and sources of innovation in supply chains.

- Belgium and the Netherlands score high on economic performance indicators such as the Global Competitiveness Index and the Logistics Performance Index (LPI)

	2012 LPI			**2007 LPI**	
	LPI rank	LPI score	% of highest performer	LPI rank	LPI score
Singapore	1	4.13	100.0	1	4.19
Hong Kong	2	4.12	99.9	8	4.00
Finland	3	4.05	97.6	15	3.82
Germany	4	4.03	97.0	3	4.10
Netherlands	**5**	**4.02**	**96.7**	**2**	**4.18**
Denmark	6	4.02	96.6	13	3.86
Belgium	**7**	**3.98**	**95.3**	**12**	**3.89**
Japan	8	3.93	93.8	6	4.02
United States	9	3.93	93.7	14	3.84
United Kingdom	10	3.90	92.7	9	3.99

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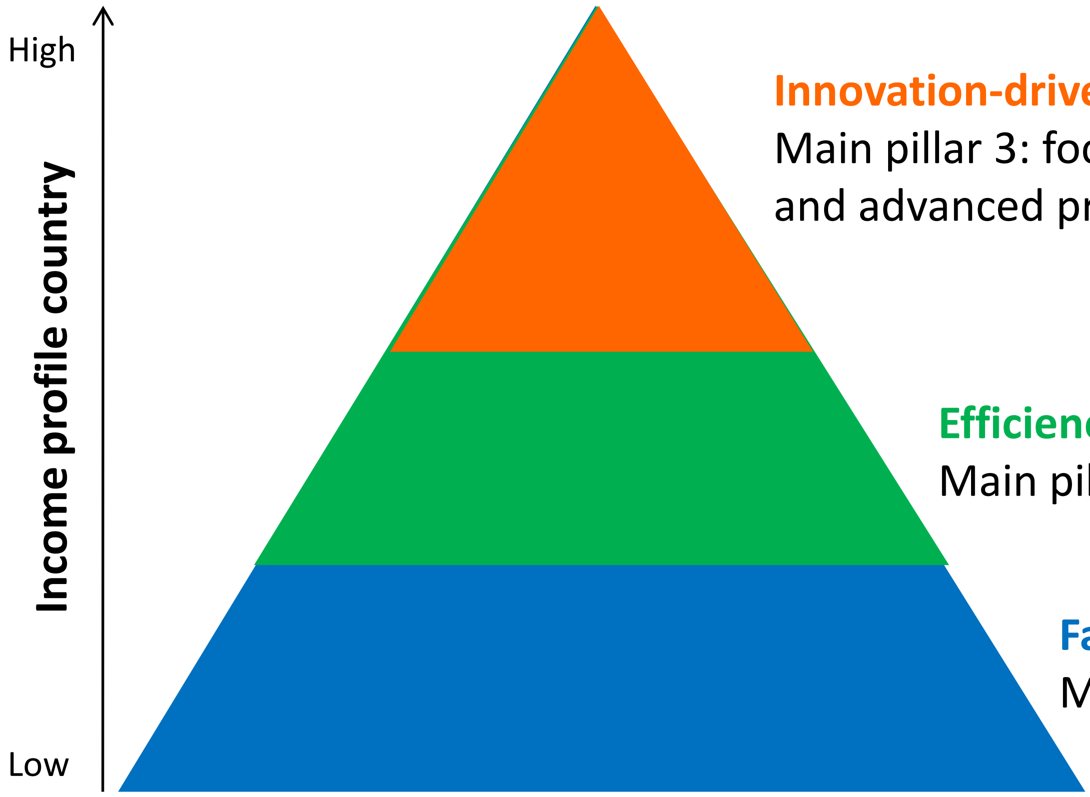
The growing importance of innovation



Innovation-driven economy
Main pillar 3: focus on innovation and advanced production factors

Efficiency-driven economy
Main pillar 2: focus on efficiency enhancers

Factor-driven economy
Main pillar 1: focus on basic requirements

Belgium and the Netherlands at top positions in many warehousing and distribution segments

Distribution centres in Europe

Rank	Food and beverage		High Tech		Consumer goods		Pharma	
1	**The Netherlands**	**36%**	**The Netherlands**	**20%**	France	40%	**The Netherlands**	**15%**
2	France	13%	Germany	17%	**Belgium**	**17%**	Spain	9%
3	**Belgium**	**11%**	France	13%	Spain	9%	Switerzland	9%
4	Germany	8%	UK	9%	**The Netherlands**	**5%**	France	6%
5	UK	8%	Spain	8%	Switzerland	5%	UK	6%
6	Spain	8%	Sweden	6%	Germany	5%	**Belgium**	**6%**
7	Poland	5%	Italy	6%	Sweden	5%	Italy	6%
8	Other	11%	Other	21%	Other	14%	Other	43%

Source: Cushman and Wakefield

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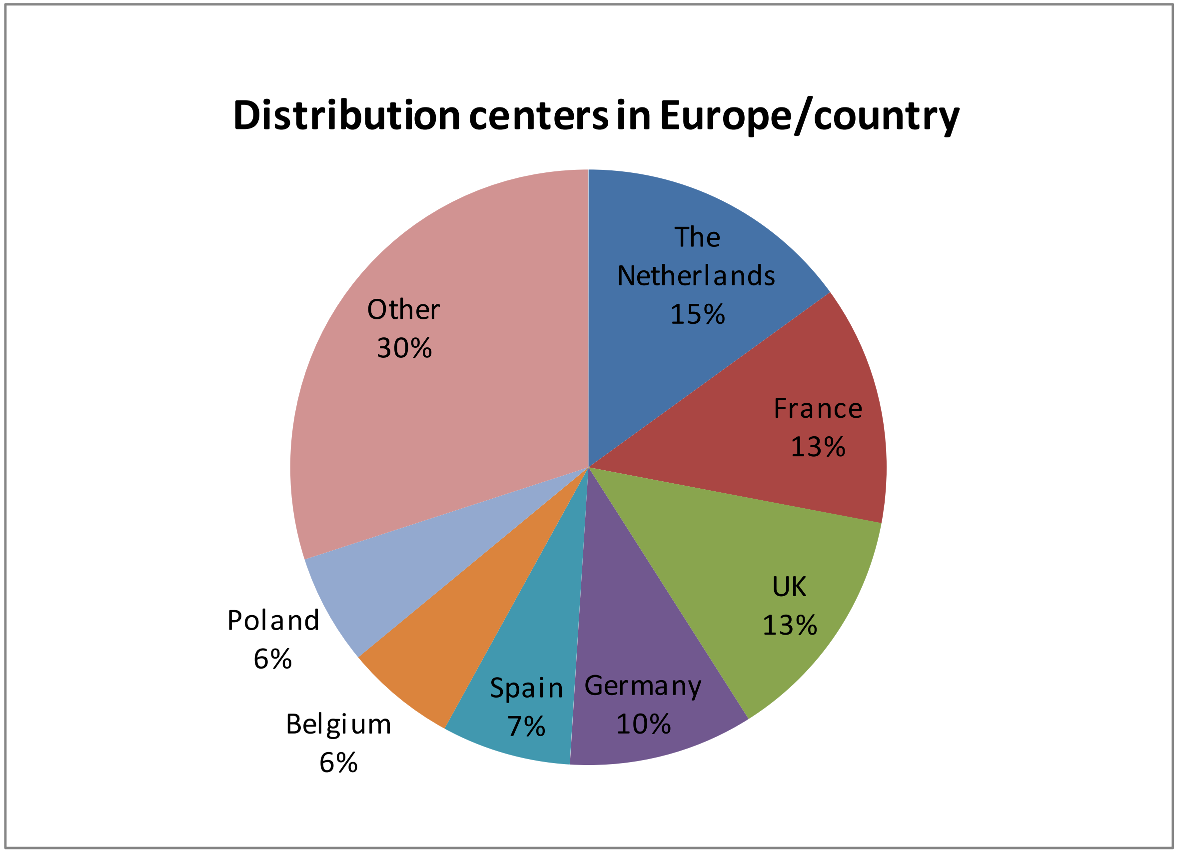
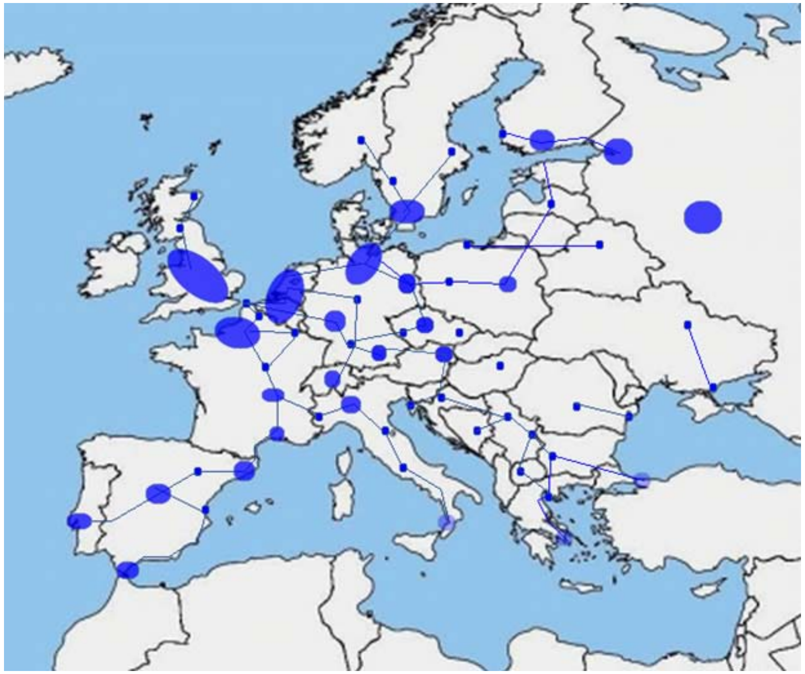
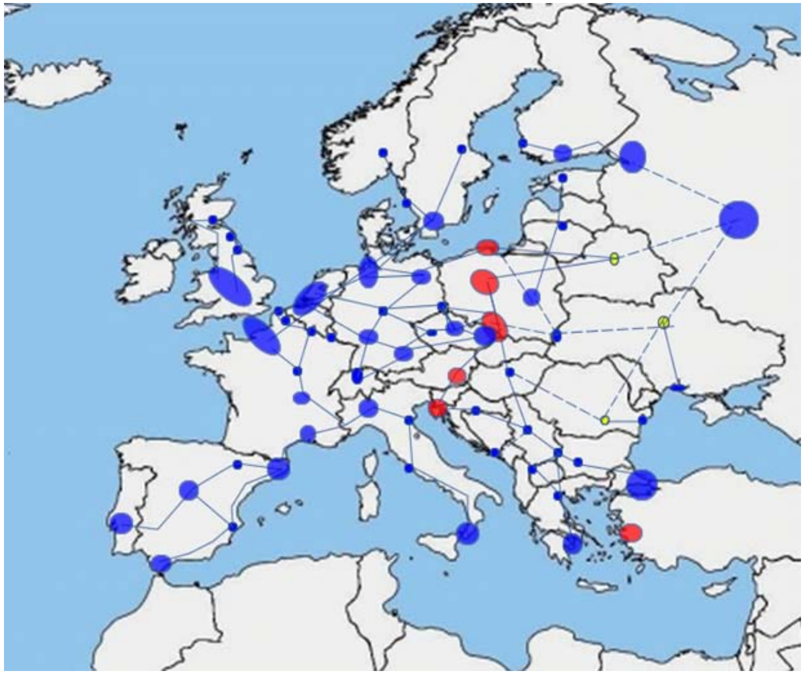
Center of gravity of distribution facilities still in Benelux, (northern) France and (western) Germany

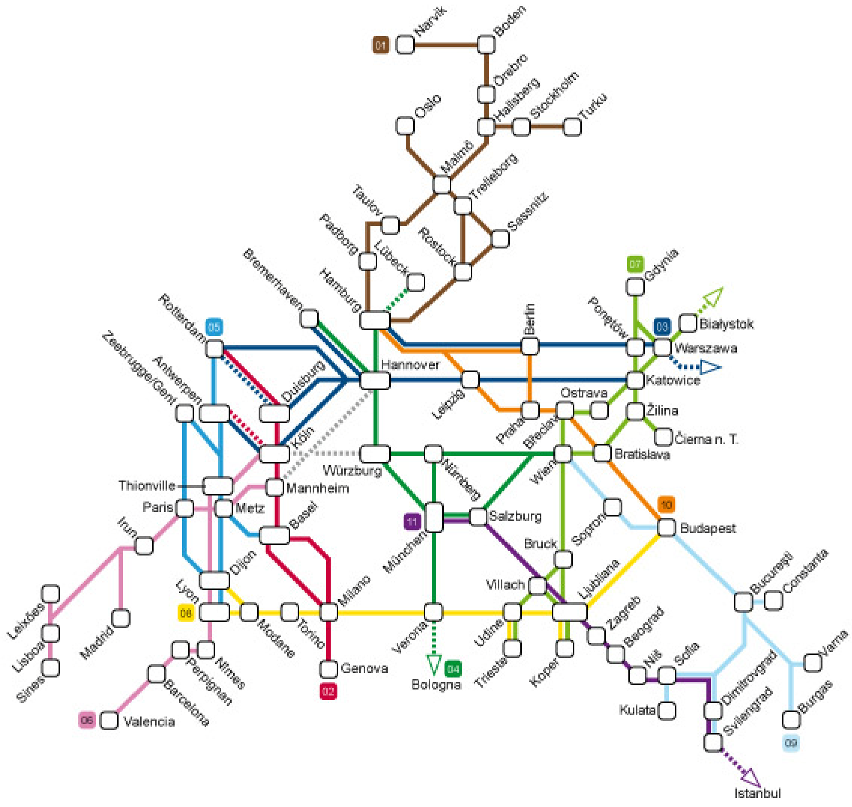


… but new logistics hubs on the horizon?





The corridor system



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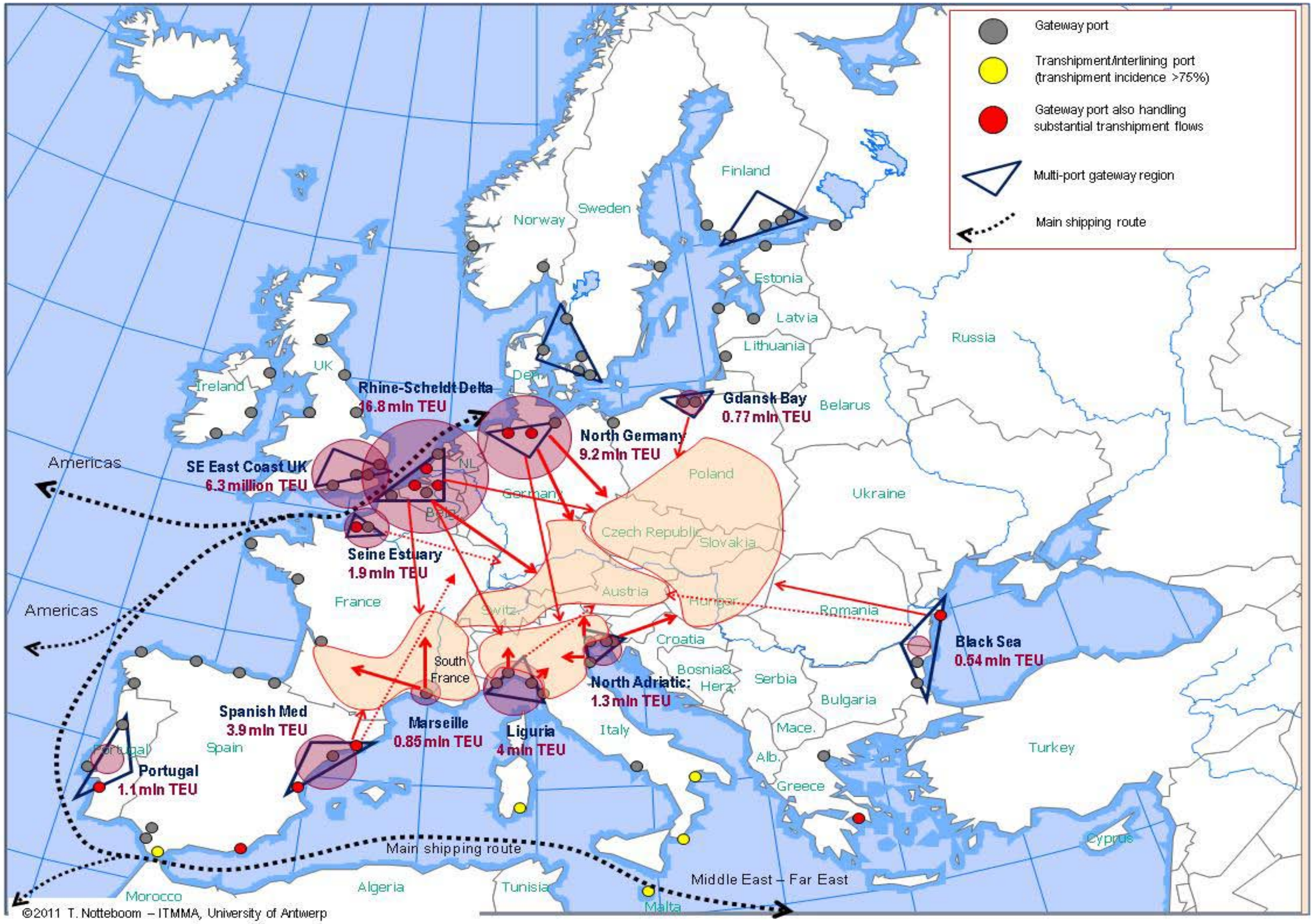
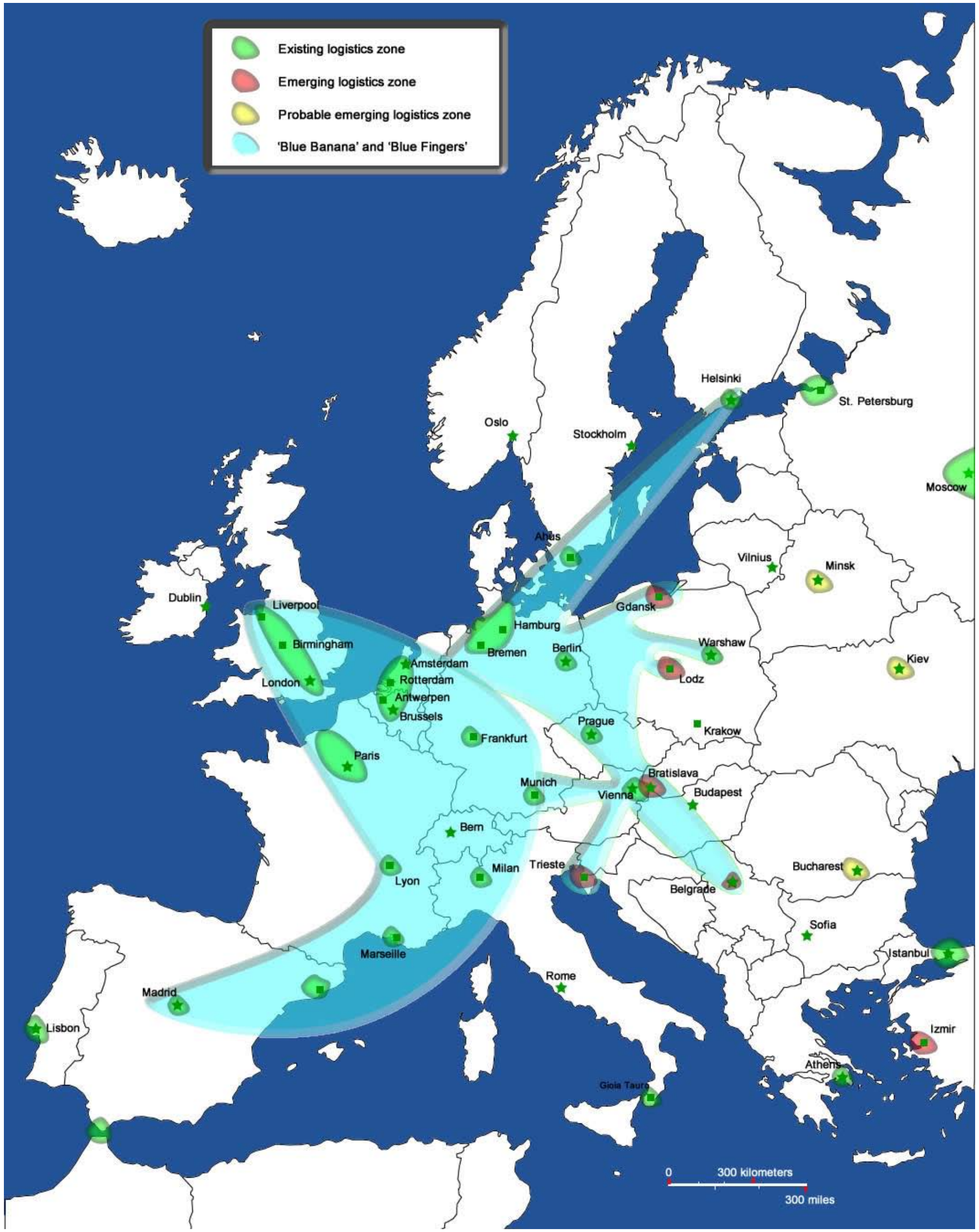
Gateways & Clusters



Why here?



Proximity and access to target markets

Why here?

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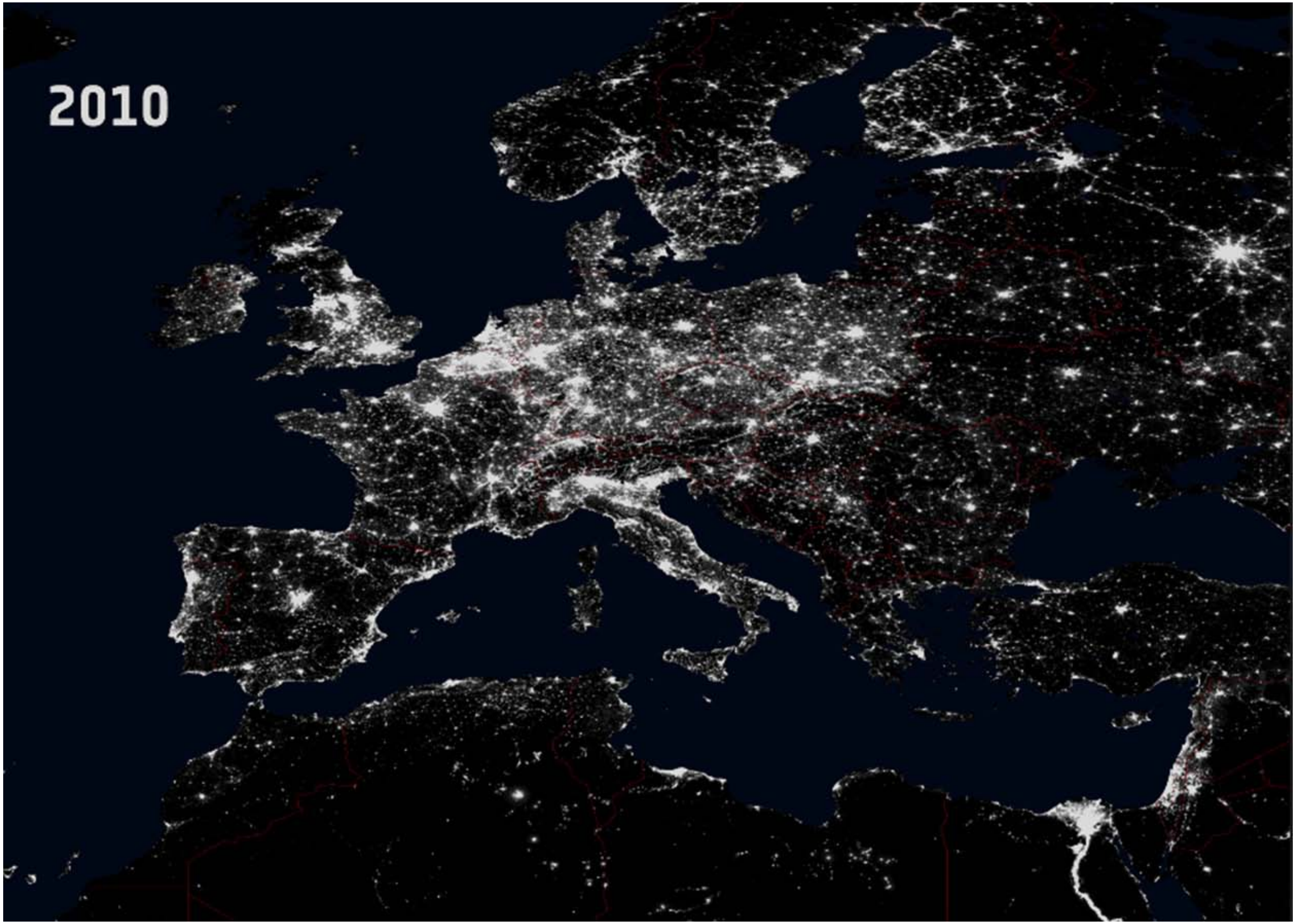
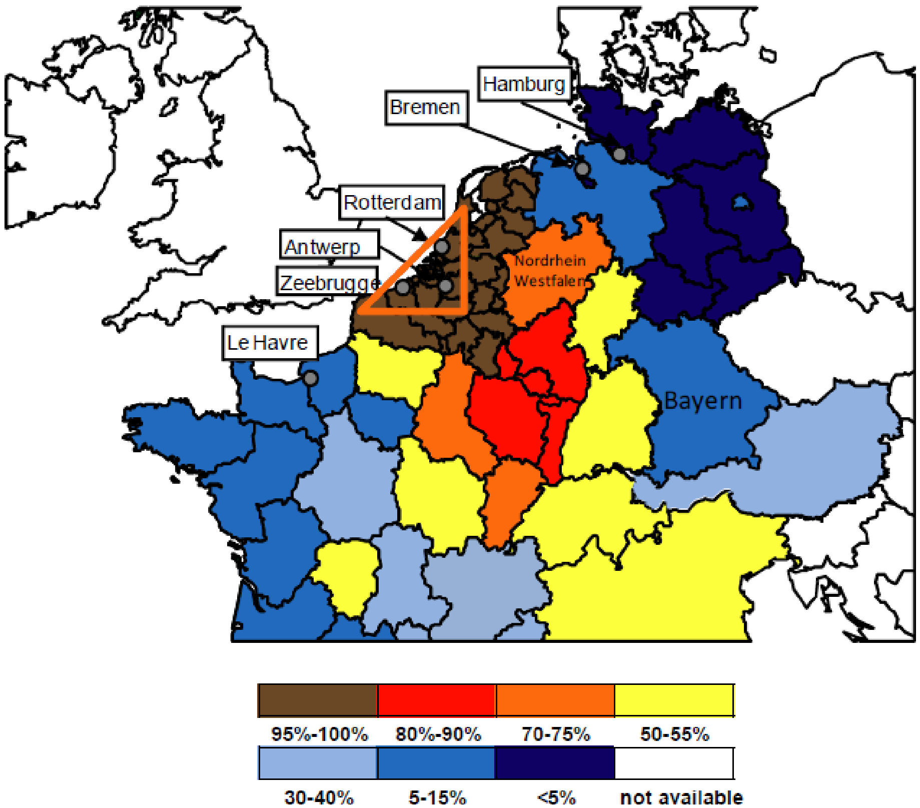

2010

Proximity and access to target markets

Estimated shares of the Delta port region in containerized inland cargo (by road, rail and barge) compared to Hamburg, Bremerhaven and Le Havre (2007)



Strong in Benelux, West-Germany and northern and northeastern France ..

.. but weak in East, Central and South Europe.

Growing importance of 24h rule puts pressure on centralised distributuon systems

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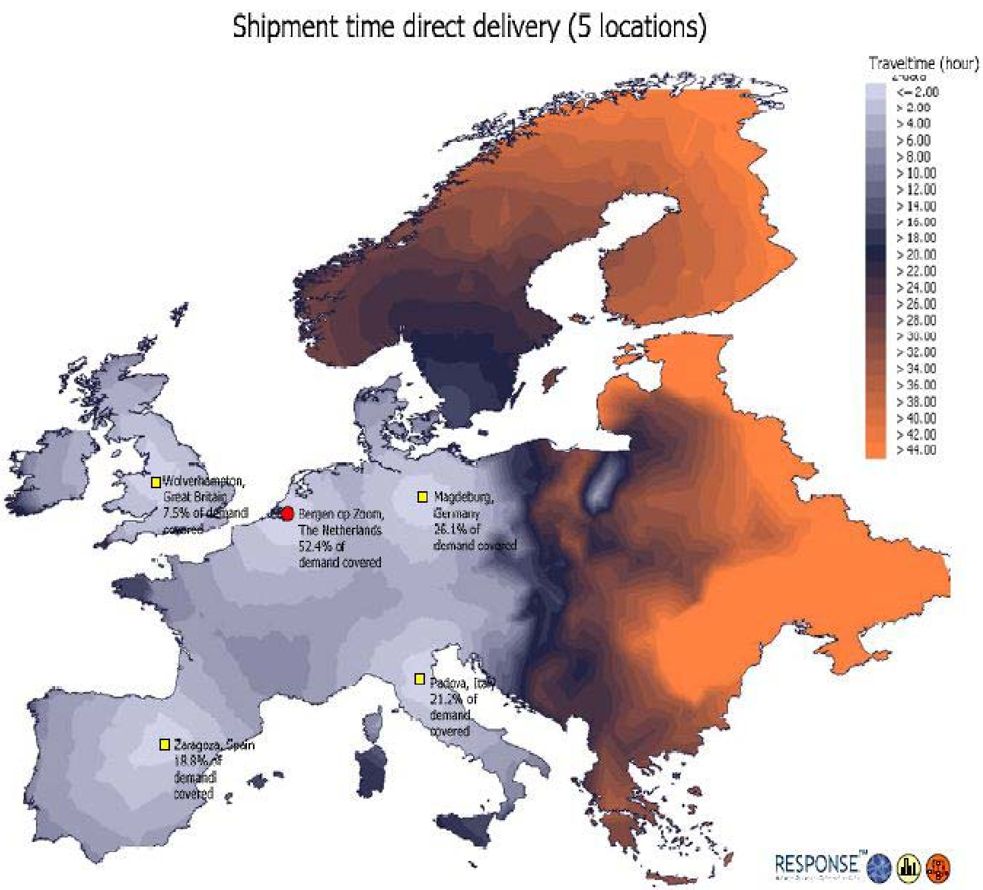
Proximity and access to target markets

The increasing importance of the '24h rule' and its impact on distribution systems



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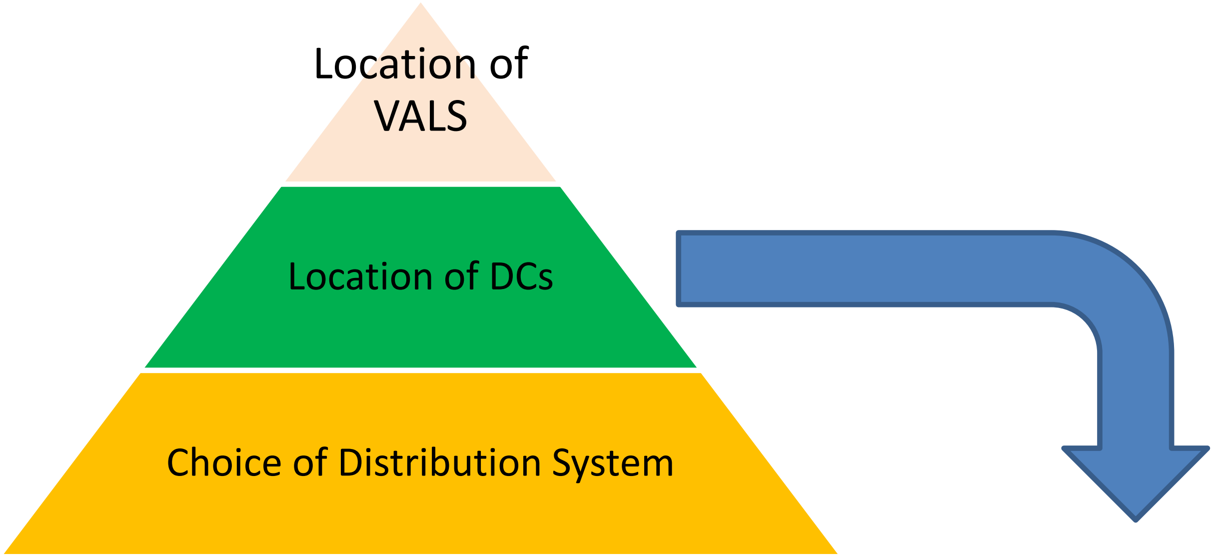


Cost factors + **Quality factors** + **Time factors**

Cost factors

- Labor costs
- Transportation costs
- Occupancy costs
- Incentives (-/-)

Quality factors

- Labor quality/flexib.
- Labor regulations
- Customs
- Transport situation
- Facilities & utilities
- Sites

Time factors

- Inbound transit time
- Outbound transit time

Why here?

- **Bulk flows** are more captive to the Delta than general cargo flows.

- Changes in the traffic position of the Delta in major bulks (dry and liquid) linked to:
  - Economic cycles: expect more volatility
  - Terminal and inland transport supply in the Delta
  - Environmental space
  - Energy policies in the Benelux and Germany
  - Location decisions of major steel and chemical companies (global competition)

- Increased processing of crude oil at the source => diversify.

- Shift from fossil fuels to non-fossil fuels => adopt a leading role in this transition.

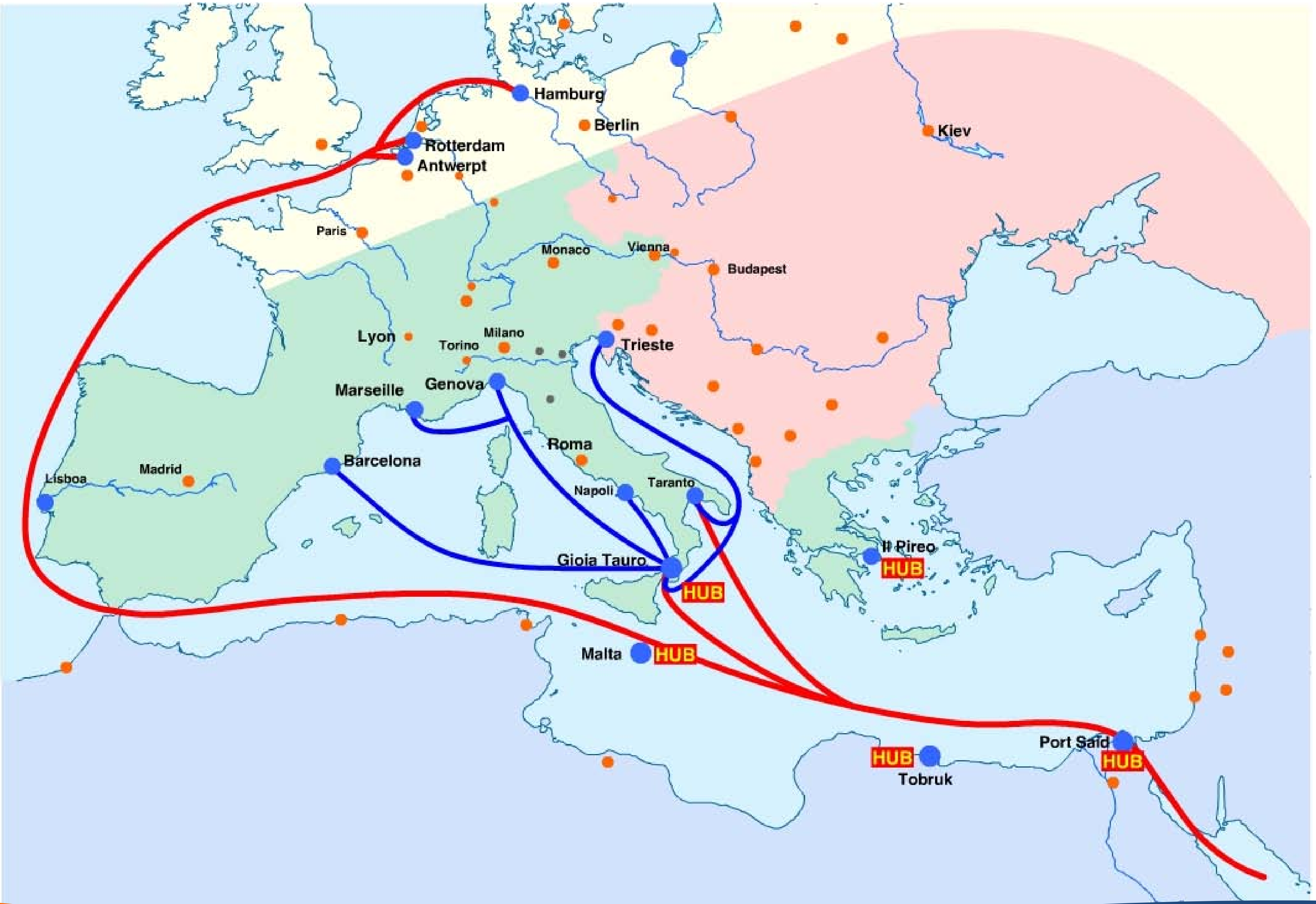
- Leading the way in innovation in sustainable production methods and ‘ecologies of scale’ at individual port level (e.g. via co-siting), but also on a regional cross-border scale (the chemical industry in the Delta).

- ‘Ecologies of scale’ should be fully acknowledged in environmental policy.

- Unaccompanied roro freight transport to/from central and northern part of the UK, Scandinavia and Iberian peninsula

- New cars: rising demand in Eastern and Central Europe, Russia and Turkey => strengthen position in hub-feeder networks.

- Car recycling industry and the rise of hybrid and electric cars
  => diversify know how and develop new business.



Future shifting?

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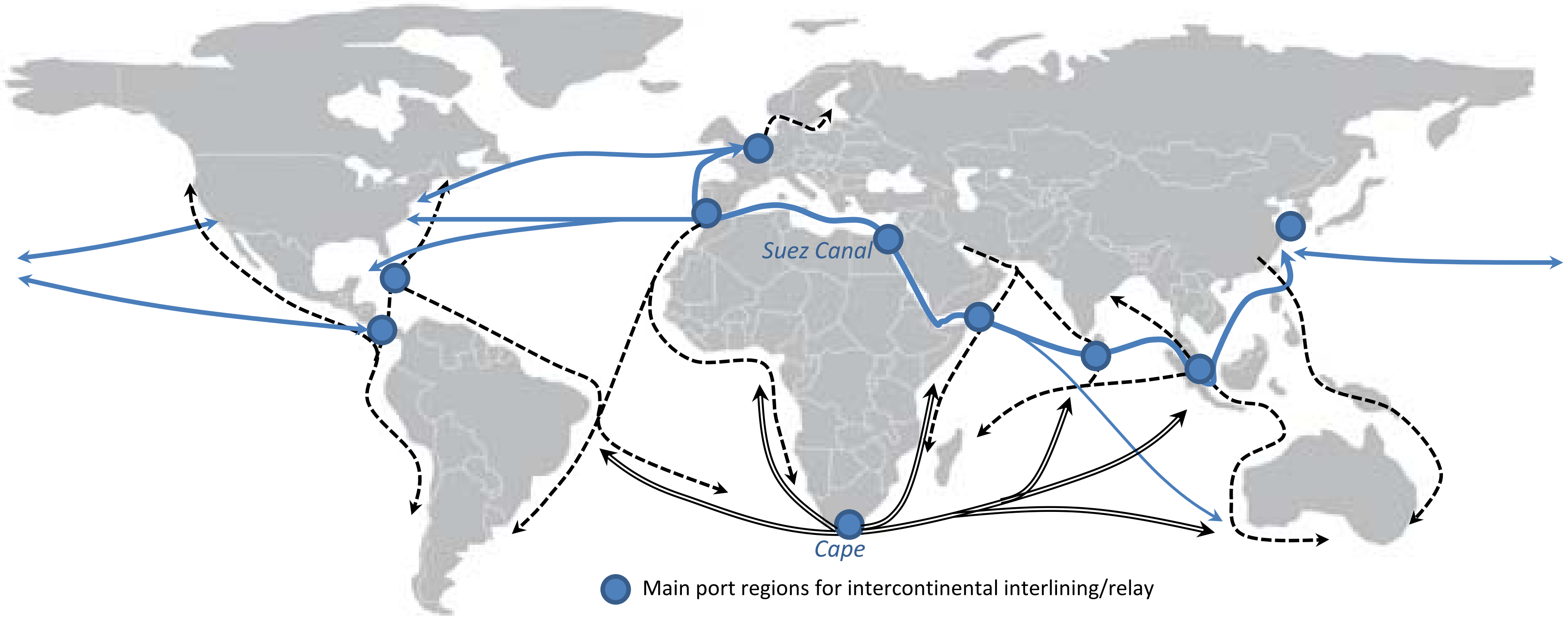
New maritime corridors to respond to a changing economic geography



Main port regions for intercontinental interlining/relay

East-West mainline routes

North-South and diagonal routes (mostly secondary)

Market potential for the Cape route

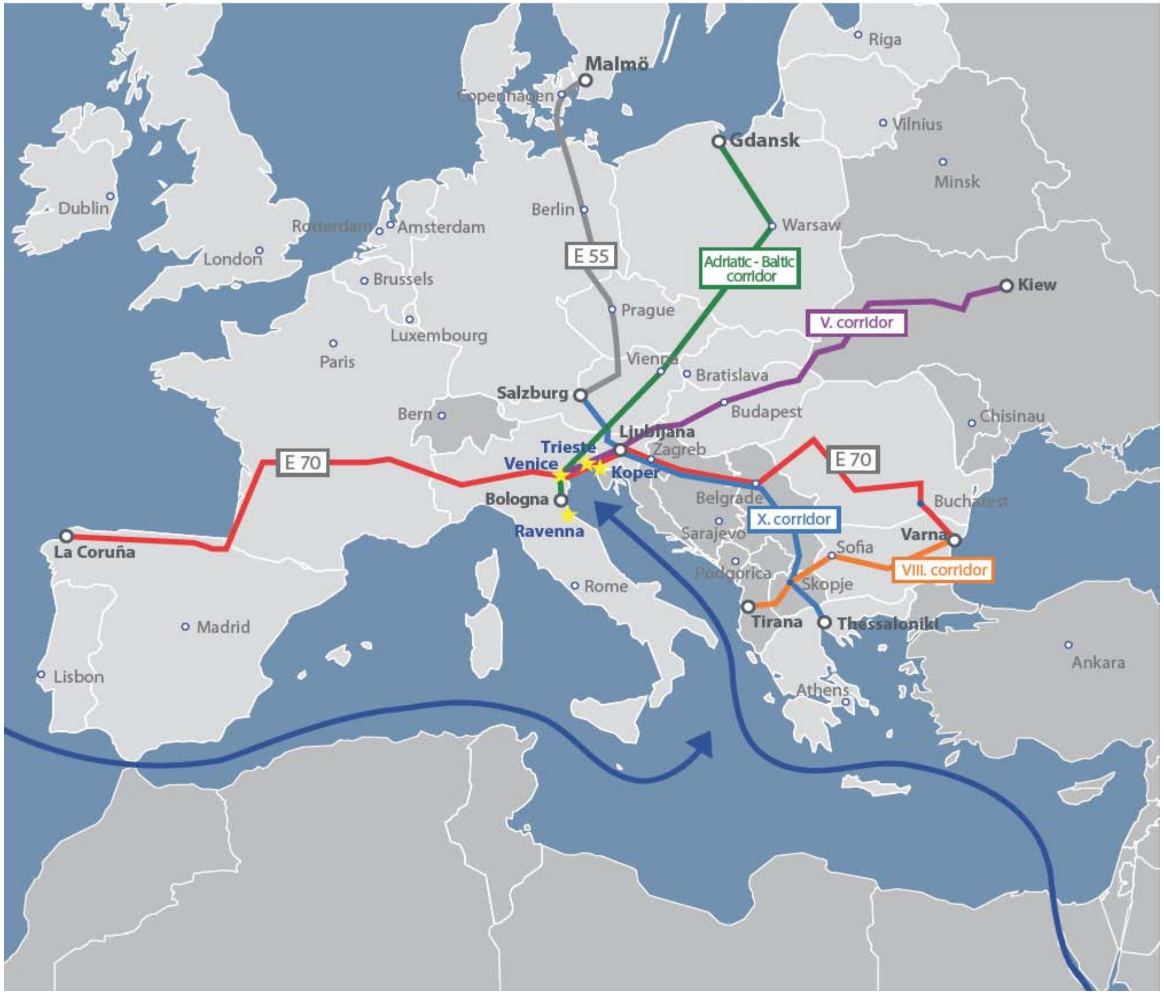
Multi-port gateway regions around Europe are organising themselves

PORT OF RAVENNA AUTHORITY

APV
VENICE PORT AUTHORITY

AUTORITÀ PORTUALE TRIESTE

LUKA KOPER
Port of Koper



Example of NAPA
(North Adriatic Ports Association)

General mega-trends impact on logistics sector

- Globalization of production and trade
- Mass customization and time to market
- Liner shipping network developments
- Increased logistics outsourcing and the rise of 3PL and 4PL
- Safety and ecology
- The rise of intermodality (?)

Specific trends on a smaller scale

- Lean warehousing aimed at reducing ‘waste’ or activities which do not generate added value for the customer.
- Green and sustainable warehouses (energy use, rolling stock, construction materials, exterior design, recycling, etc..)
- Collaborative warehousing
- IT and technology:
  - Improved product flow visibility, event management, performance management
  - WMS (Warehousing Management System) and TMS (Transport Management System) integration
  - labour management software
  - voice-enabled technology

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Concluding remarks

Warehousing is a key economic activity, an important component of distribution systems and supply chain solutions and an enabler of gateway and industrial activities

Belgium and the Netherlands remain top locations but reconfigurations and adaptations to logistics networks are eminent (e.g. twin EDC-concept, rise of eastern Europe, etc..)

Ports are business ventures.

Key themes for future port development:

- Space: Delta focus
- Accessibility: co-modality, road, information flows
- Efficiency in dealing with supply chains: orchestration/control type of services without de-prioritizing the accommodation of physical flows and industrial activities
- Sustainability: high environmental performance

Delta ports should extend their frontrunner's position through innovation in developing business cases and new cooperation and coordination models

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Thank you for your attention!