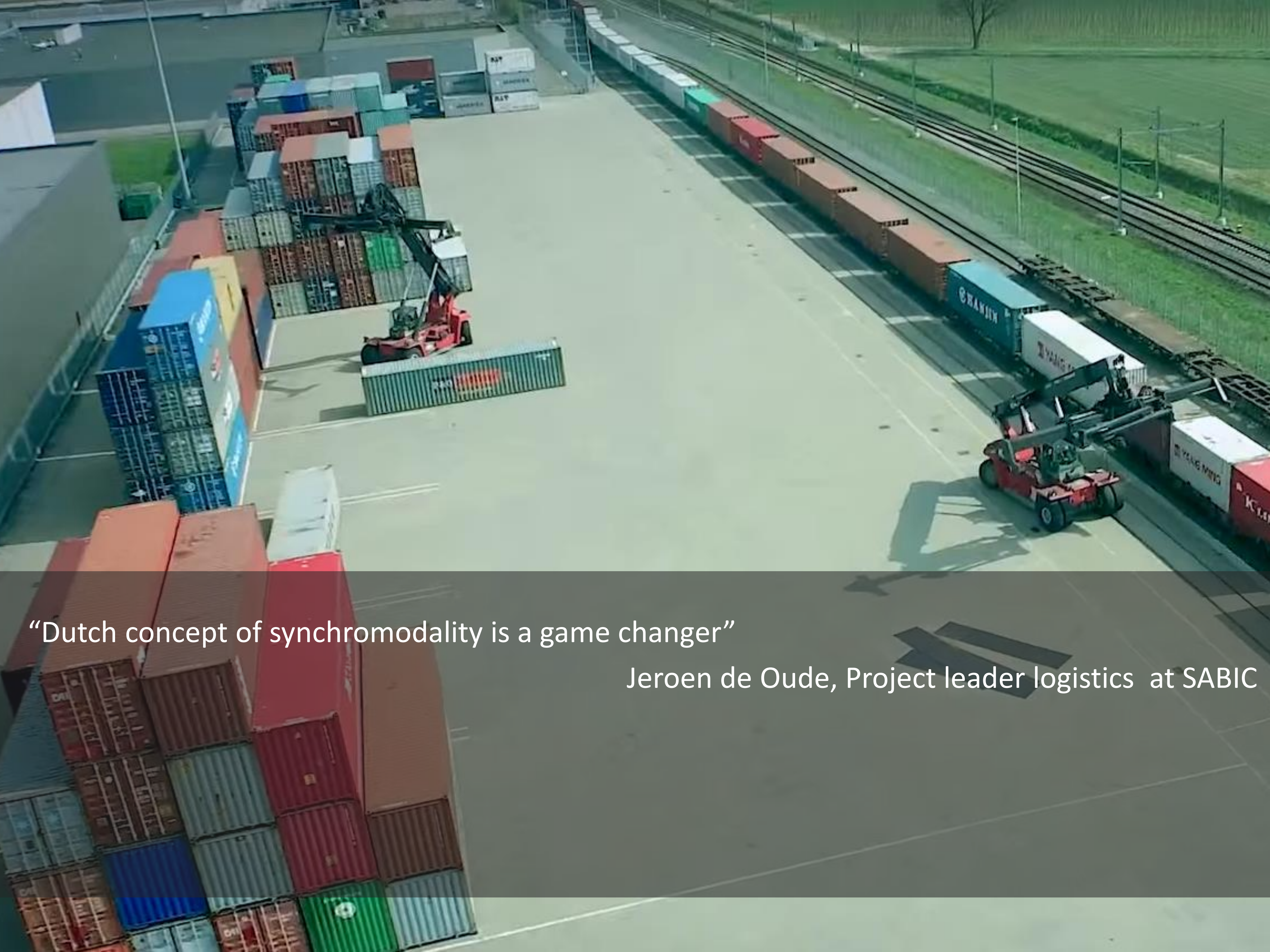
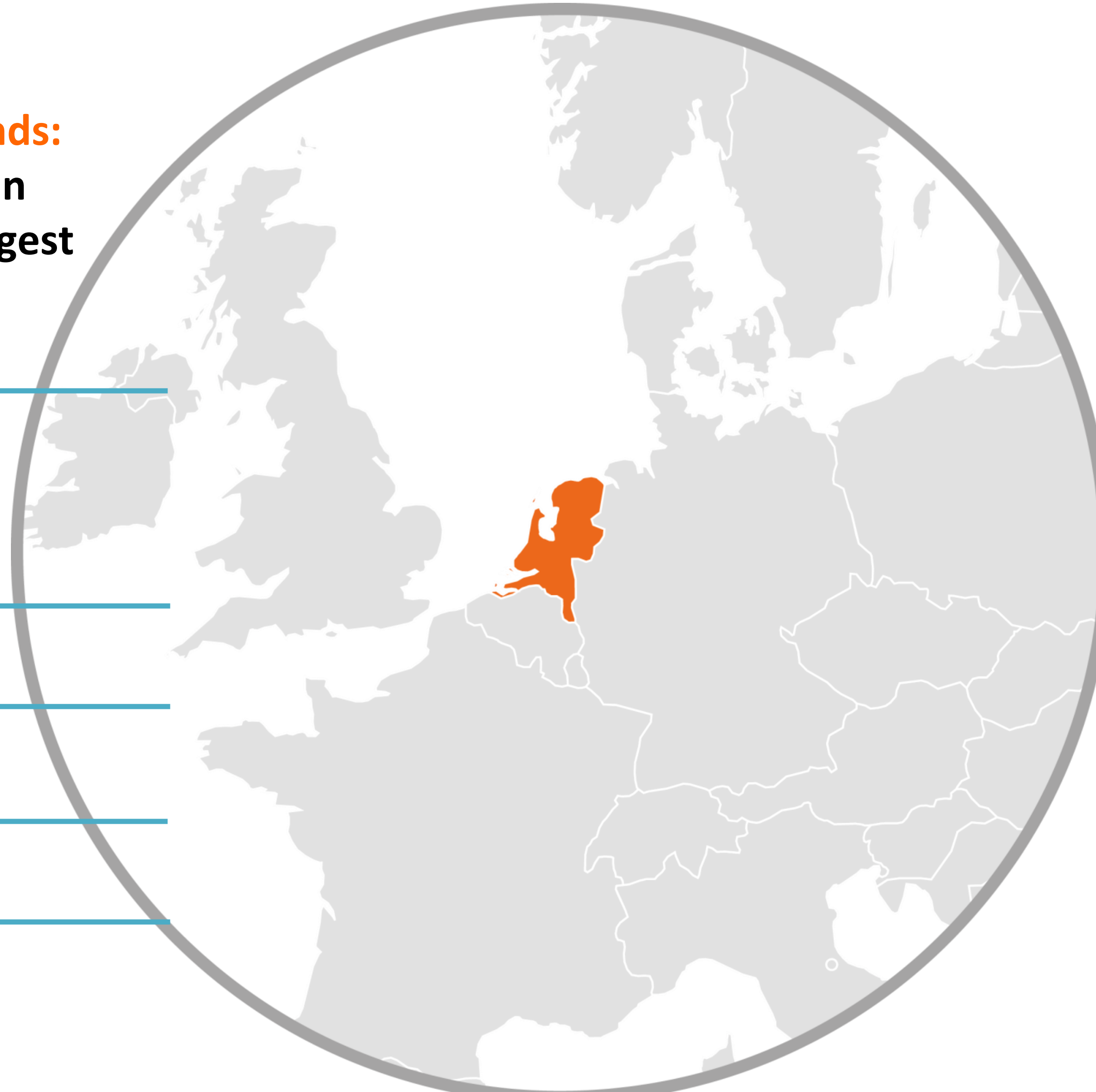
Multimodal hinterland logistics
The Netherlands



“Dutch concept of synchromodality is a game changer”

Jeroen de Oude, Project leader logistics at SABIC

The Netherlands: Fast Facts



Welcome to the Netherlands:
Ideal geographic location in the centre of the three largest economies in Europe: Germany, UK and France

Vote!

Parliamentary democracy and constitutional monarchy

Currency: Euro (€)

Area: 16,033 square miles

Capital: Amsterdam

The Netherlands: Top Reasons to Invest

Location

- Located in the centre of the three largest economies in Europe: Germany, the UK and France
- Excellent accessibility to the rest of Europe
- A high quality infrastructure

International Business Climate

- An open culture with an international mindset
- Vibrant cosmopolitan community combining business and creativity
- High quality of life and relatively low cost of living

Tax and Costs

- A beneficial tax system with competitive 25% corporate tax rate
- A 30% tax ruling for foreign employees
- Relatively low costs of doing business

Workforce

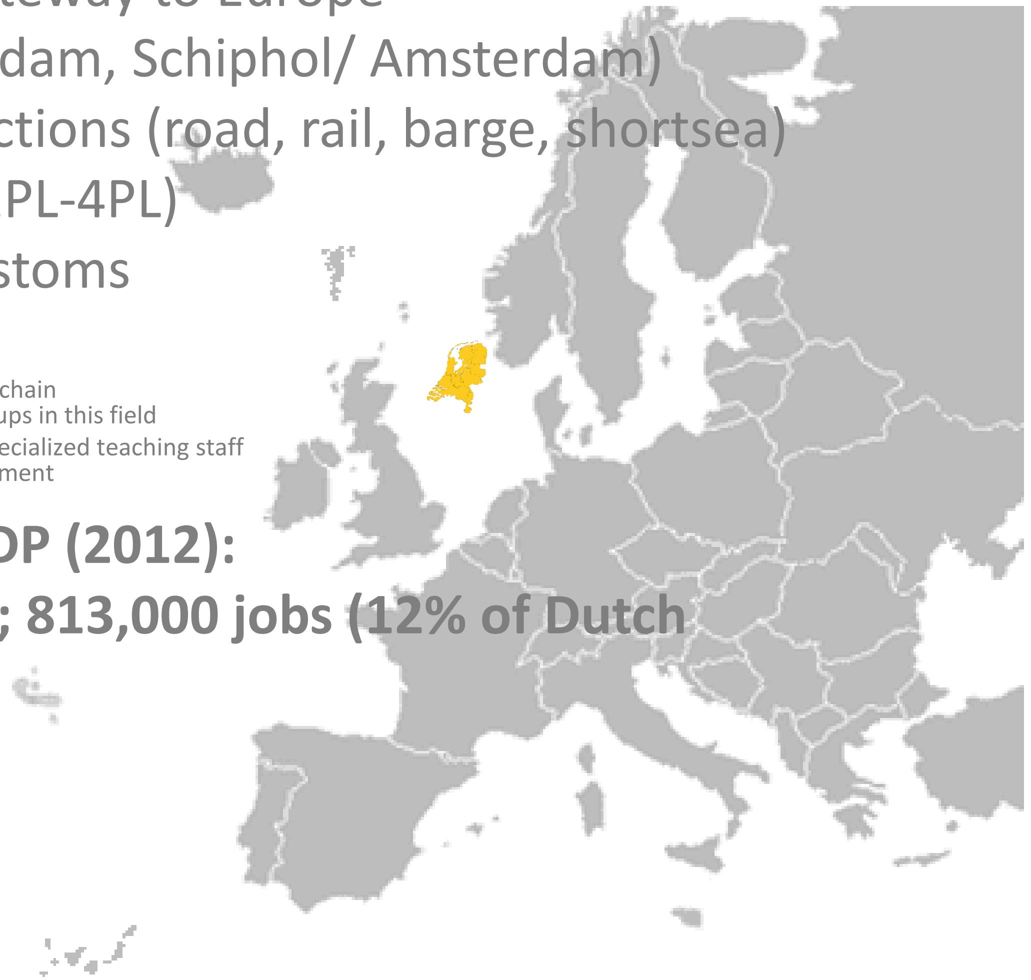
- Competitive labour and operational expenses
- A highly motivated, well-educated and multilingual labour force
- Most Dutch people speak English very well and many have good knowledge of German and French

The Netherlands = Logistics

- Geographical position as gateway to Europe
- Excellent Mainports (Rotterdam, Schiphol/ Amsterdam)
- Excellent Hinterland Connections (road, rail, barge, shortsea)
- Logistic Service Providers (1PL-4PL)
- Legislative framework & customs
- High level of knowledge:
  - 8 Universities with specialization in logistics / supply chain management, with over 45 professors/ research groups in this field
  - 11 Universities of Applied Research with over 150 specialized teaching staff with specialization in logistics / supply chain management

Logistics/ transport related GDP (2012):

55 billion euros (10 % of GDP); 813,000 jobs (12% of Dutch workforce)



Dutch Collaboration for economic competitiveness

Logistics is one of the nine priority sectors in Dutch economic policy. Government, business and academia work together to increase competitiveness, in business climate, education, infrastructure and innovation.

Ambition logistics:

In 2020, the Netherlands holds an international top position

1. in handling transport flows through the NL,
2. as supply chain coordinator of international logistic activities and
3. as a country with an attractive innovation and business climate

National innovation program in logistics

The National Innovation program of the economic priority sector Logistics in the Netherlands focusses on six innovation roadmaps, in which innovation is driven and carried out by all partners in the supply chain.

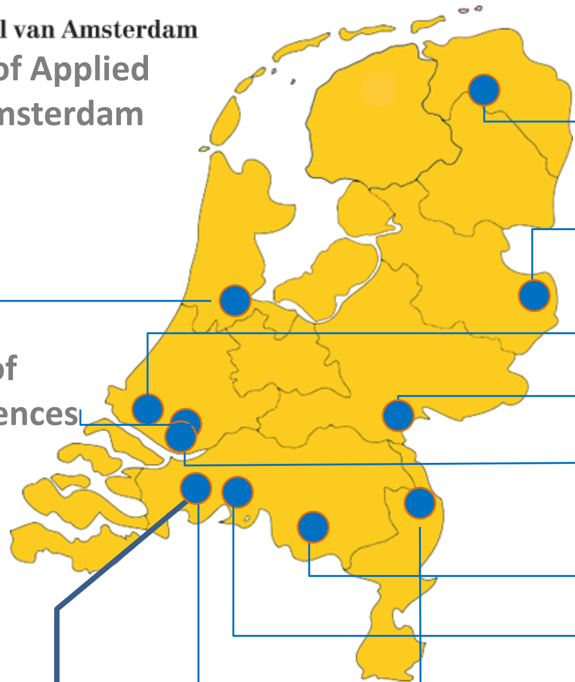
1. **Neutral Logistics Information Platform**
2. **Trade compliance and border management**

3.Synchromodality optimally flexible and sustainable deployment of different modes of transport in a network under the direction of a logistics service provider,

4. Cross Chain Control Centers
5. **Service Logistics**
6. Supply Chain Finance

Cross Chain Control Centers has been recognized as one of the internationally competitive strong areas with further development potential in the Netherlands and dedicated resources are geared to develop this field advance this competitive position even further.

Knowledge institutes and universities



University of Applied Sciences Amsterdam

University of Applied Sciences Rotterdam

University of Groningen

University of Twente

Delft University of Technology

University of Applied Sciences Arnhem Nijmegen

Erasmus University Rotterdam, School of Economics

Eindhoven University of Technology

Tilburg University

Netherlands Defense Academy

University of Applied Sciences Breda (NHTV)

University of Applied Sciences Venlo (Fontys)

DINALOG
Dutch Institute for Advanced Logistics

Knowledge Distribution Center

A Knowledge Distribution Center is the logistics axis for knowledge or innovation matters for companies in the region. In a KDC, University Of Applied Science graduates work with all sorts of parties with regard to application, further development and distribution of knowledge. In the KDC, commerce, education and government involved in regional logistics work together to improve access for companies to (new) knowledge and innovation.

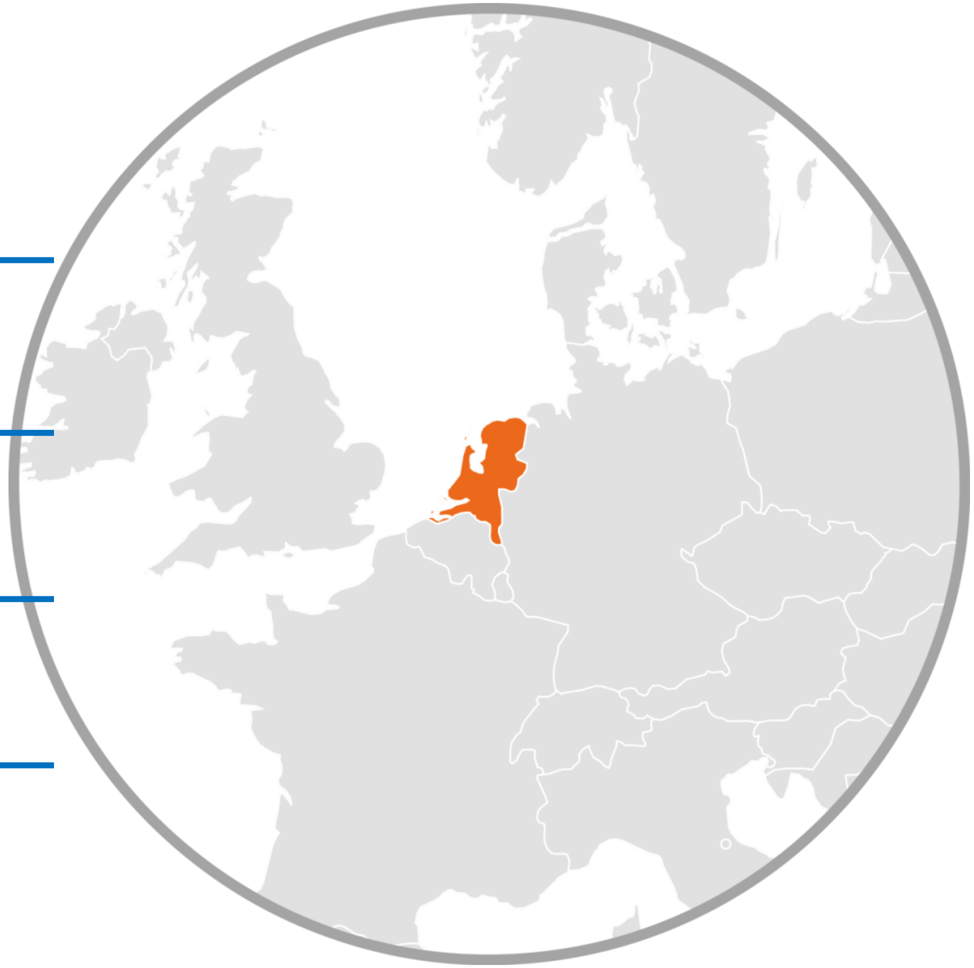
Six KDCs are to be established in the Netherlands to bundle their strengths with Dinalog to create a network with national coverage.

KDCs are focused on their own region. KDCs will have different expertise, networks and focus, but all with a common goal: to help the entrepreneur with logistic innovation. What do the KDCs mean exactly for you as an entrepreneur?

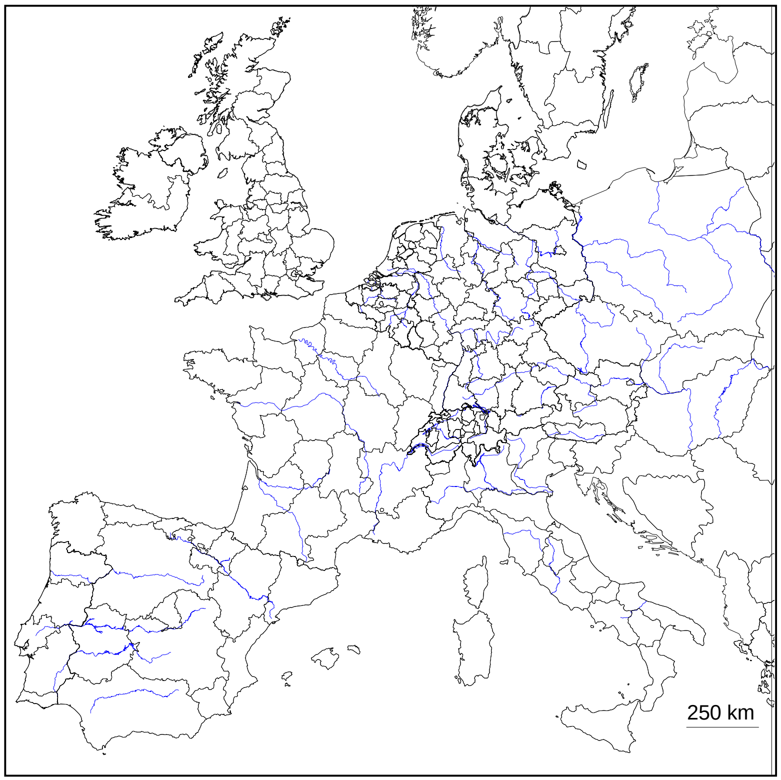
Efficient hinterland logistics

Benefits

- Optimal use of transport network in Europe
- Savings in costs and decreased pressure on the environment by combining modalities
- New knowledge and new profitable business activities (incl. new jobs);
- Improved attraction of the Netherlands on foreign companies.



Dutch focus on inland waterway transport



Source BCI 01-160

Connected to main European waterways

- Rhine
- Meuse
- Moselle
- Danube
- Canal system North West Europe

Business

- > 50% of European barge fleet registered in the Netherlands
- Strong cluster of maritime industry
- Financial infrastructure for inland shipping with specialized banks

Knowledge network

- Internationally oriented shipping industry
- Innovation cluster in IT, ship design, shipbuilding and intermodal networks
- High quality education specialized in inland shipping

Innovation
Hinterland transport

Inland Waterway Innovation Program Ministry of Transport

- sharing of (digital) information and cooperation in the logistics chain, more appealing inland navigation (non-polluting, fast and safe) and reliable voyage times and preparing the inland navigation sector for a growth in cargo transportation,

Ambition:
Accommodate high quality barge transport as alternative for road transport

Projects in 3 clusters: sharing information, Co-operation in logistics chains and reliable voyage times

Improve logistic networks for ports and hinterland destinations

133,000 TEU transferred from road to waterways saving 12,8 million KM's by road and a reduction of 6,500 tons of CO_2.

EU focus on hinterland transport

- EUWhite paper 2011; Roadmap to a Single European Transport Area: optimising the performance of multimodal logistic chains, including by making greater use of inherently more resource-efficient modes;

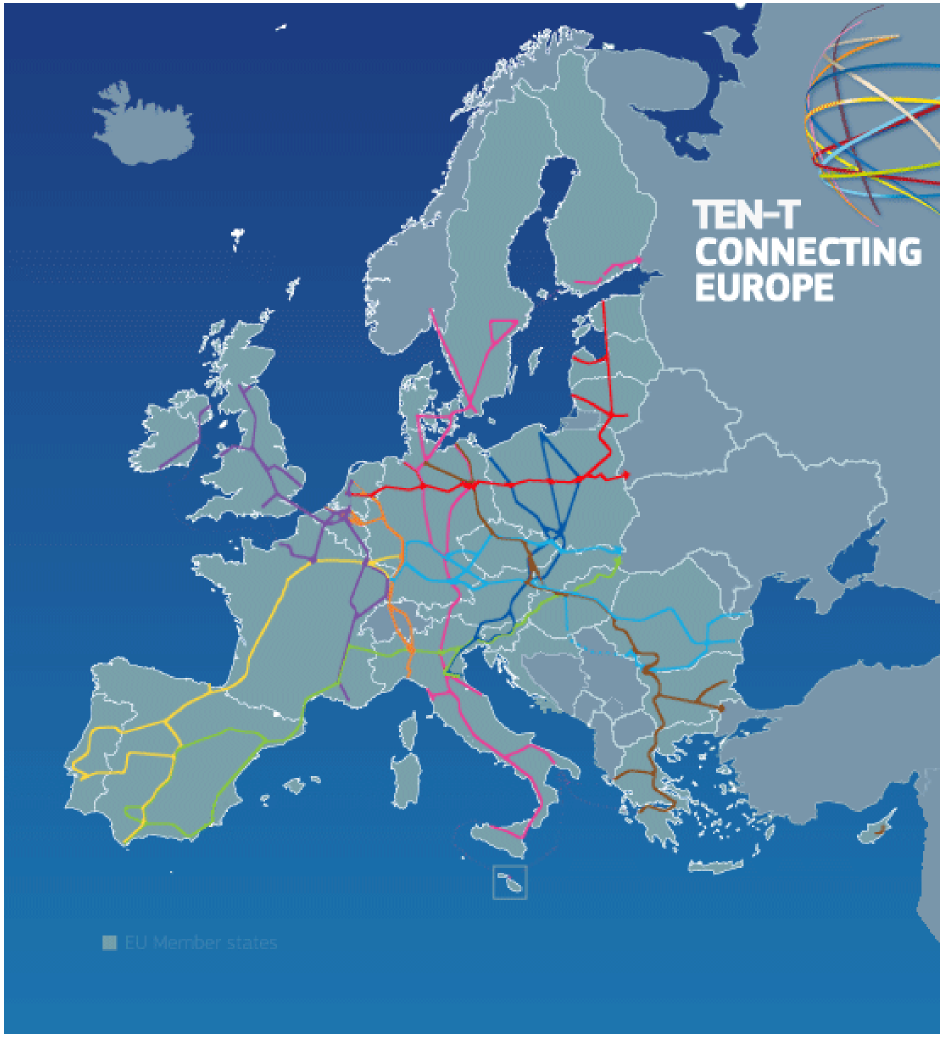
- Target:
  - 60% reduction of emissions in 2050
  - 2030: 30% of transport > 300 km by barge or rail
  - 2050: 50% of transport > 300 km by barge or rail

TEN-T connecting Europe

- TEN-T network, investments in connections, ports and infrastructure

- "Core network corridors" were introduced. They bring together public and private resources and concentrate EU support from the CEF, particularly to:
    - remove bottlenecks,
    - build missing cross-border connections and
    - promote modal integration and interoperability

- Three TEN-T corridors connect the Netherlands to Europe
    - North Sea-Mediterranean
    - North Sea-Baltic Corridor
    - Rhine-Alpine Corridor

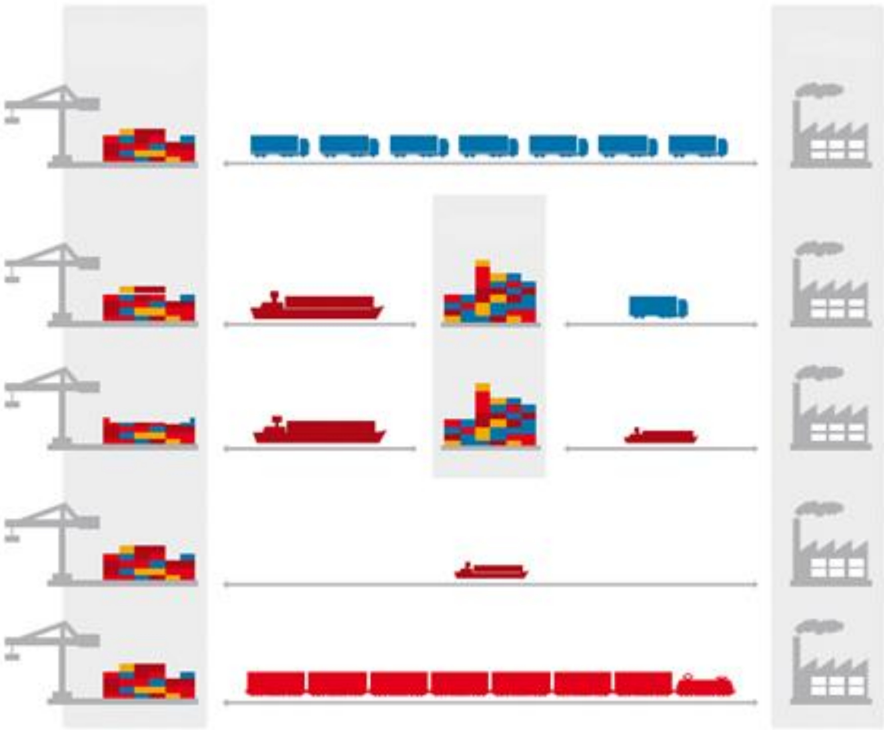


SYNCHROMODALITY

Synchromodality

Definition

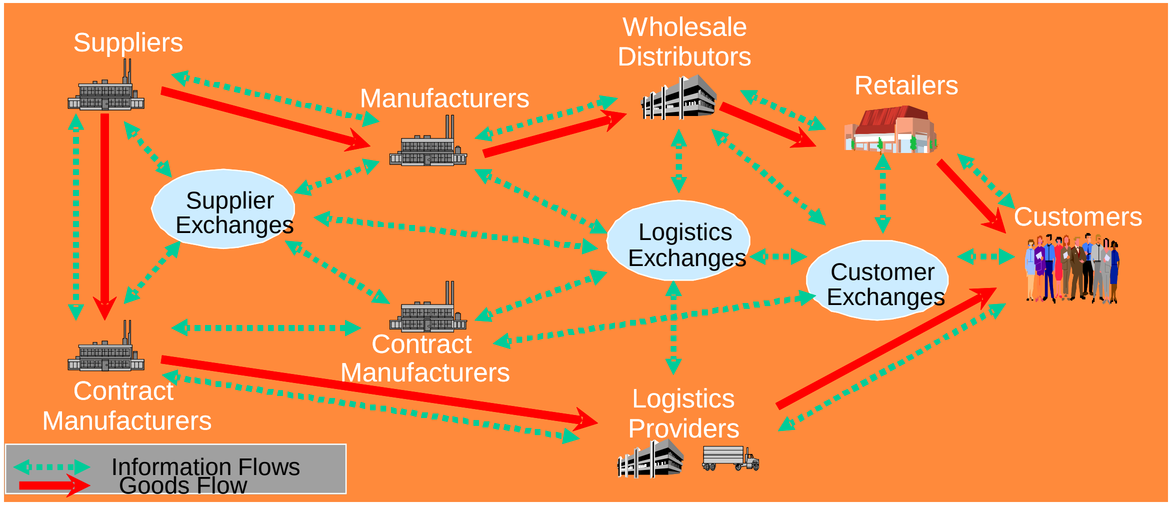
- Synchromodality is the optimally flexible and sustainable deployment of different modes of transport in a network under the direction of a logistics service provider, so that the customer (shipper or forwarder) is offered an integrated solution for his (inland) transport.



Synchromodal coordination

Developed by different kind of service providers and some examples of companies active in synchromodal transport in the Netherlands

- Carrier Haulage: services by shipping companies (Maersk, MSC)
- Merchant Haulage: services by forwarders/LSP's (i.e. Seacon)
- Terminal Haulage: services by deep sea terminal (ECT) or inland terminal (BCTN)
- Rail/barge haulage: rail or barge operators (Alcotrans, Contargo)
- Network haulage: services by 4PL's (Wayz)



Synchromodality
Innovative hinterland transport solutions

Ambition:
International top position synchromodal tools and execution

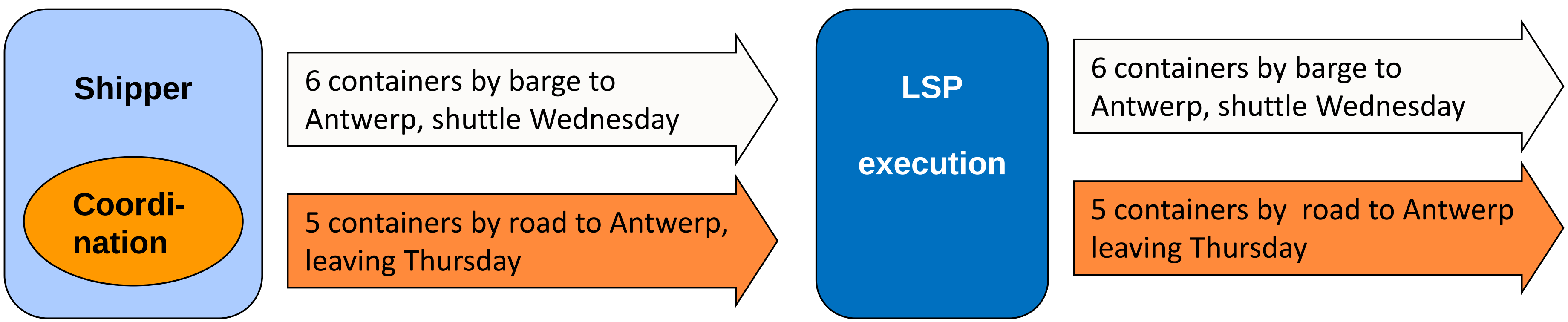
Coordinate and control international synchromodal transport flows

Support international synchromodal solutions from the Netherlands

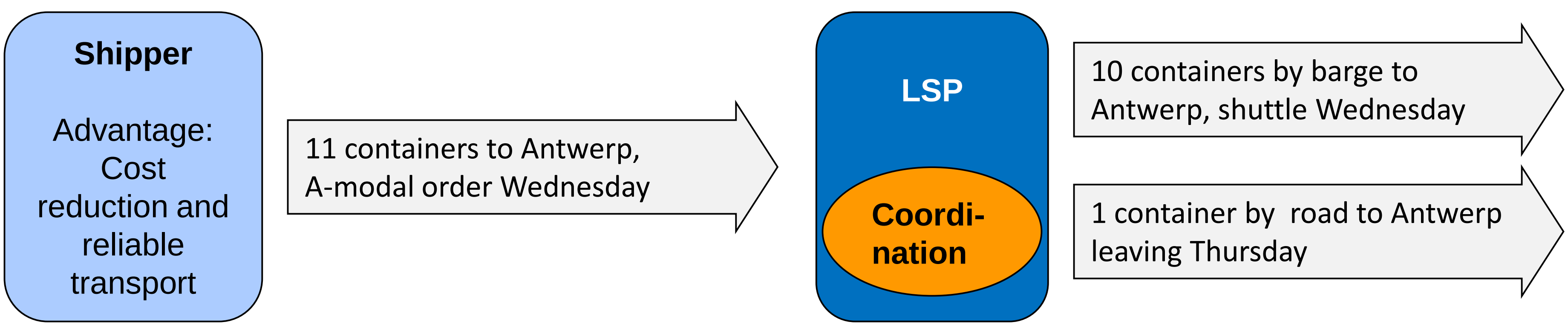
Increased share of GDP in synchromodal solutions

Example: intermodal order vs. Synchromodal coordination

INTERMODAL/CO-MODAL ORDER

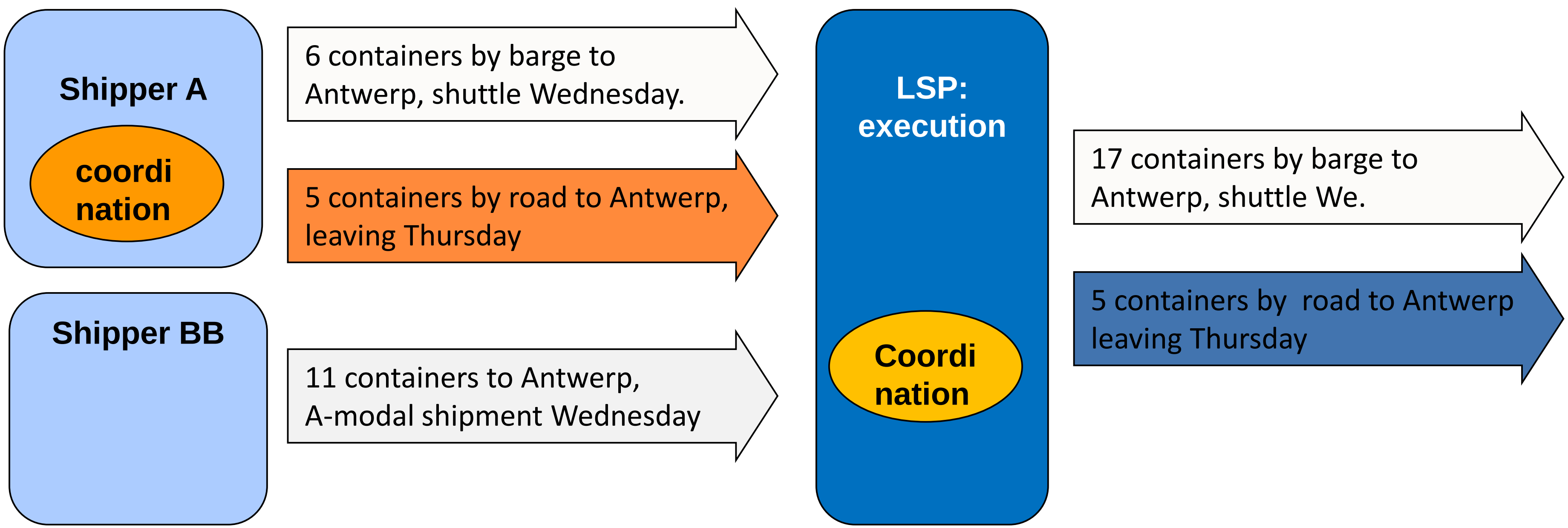


SYNCHROMODAL ORDER / COORDINATION



Execution, example

- Case studies the Netherlands



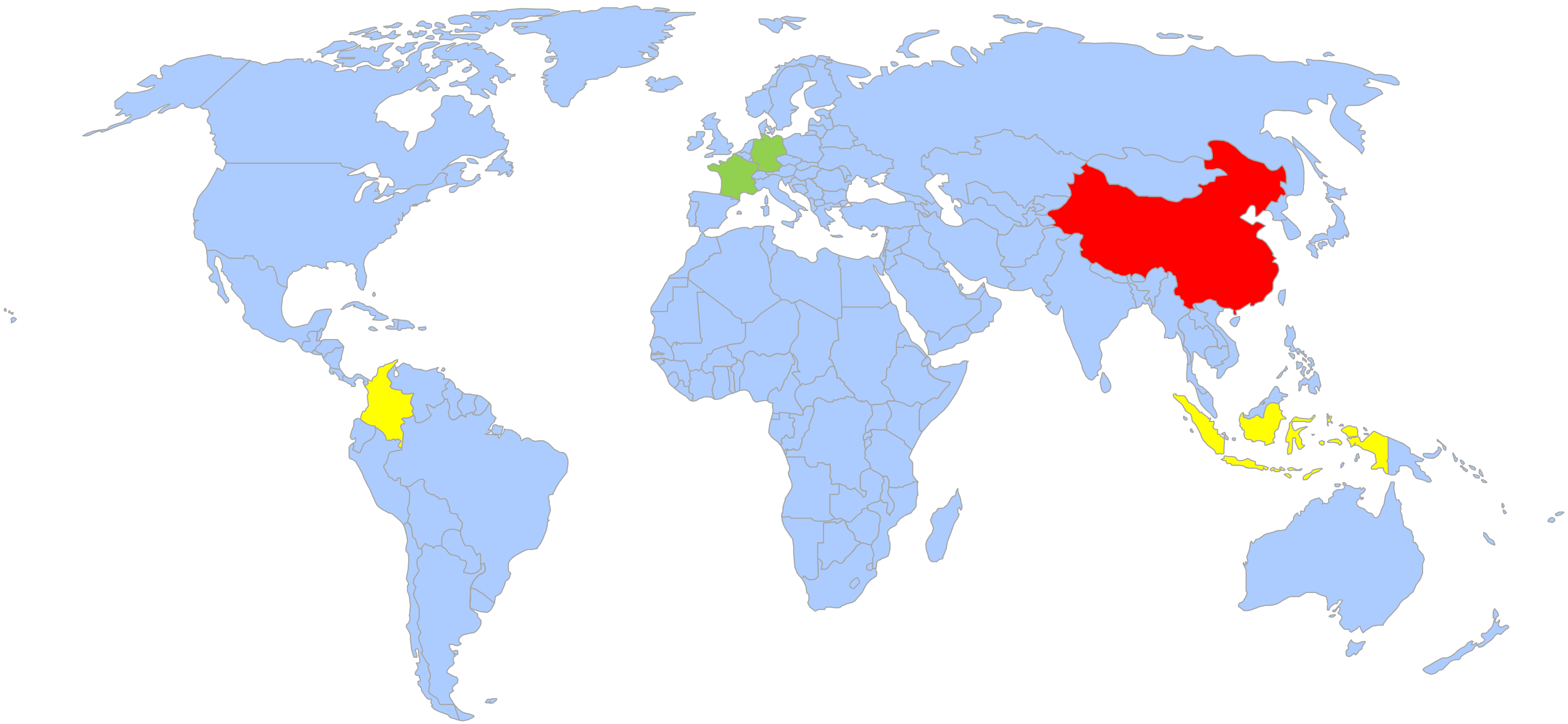
ANALYSIS TARGET MARKETS

Target markets Supply Chain Coordination

Neighbouring countries

Fast growing markets

Developing markets



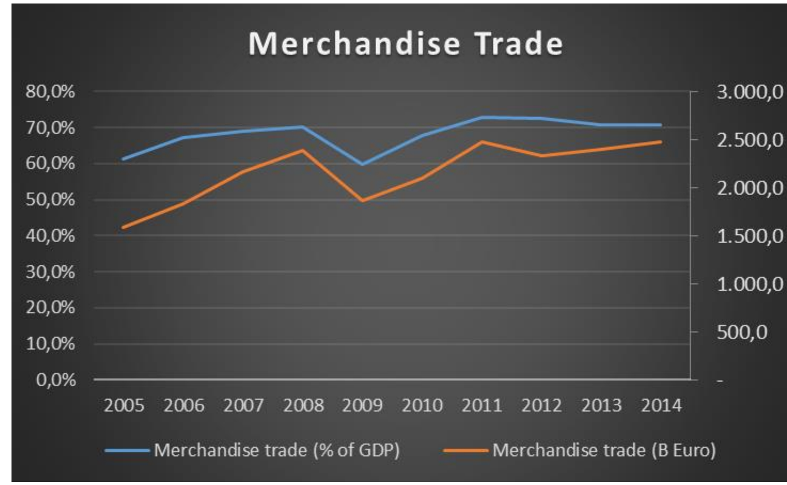
Global developments

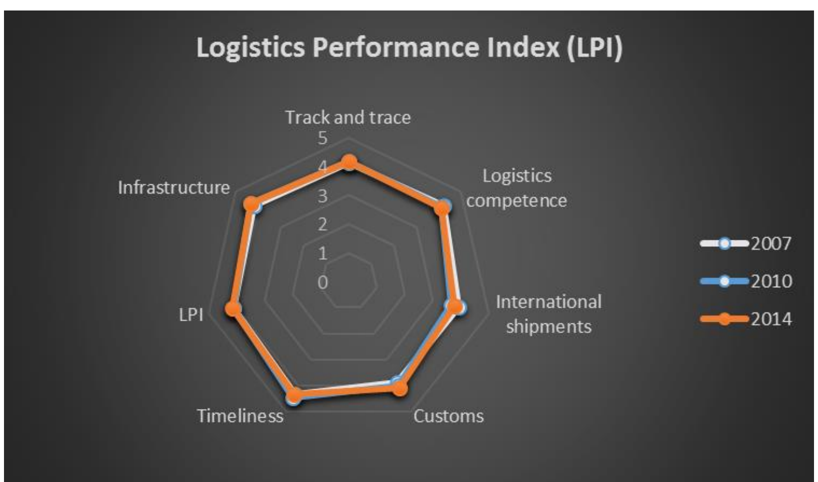
Source: Freightxtension (2014)

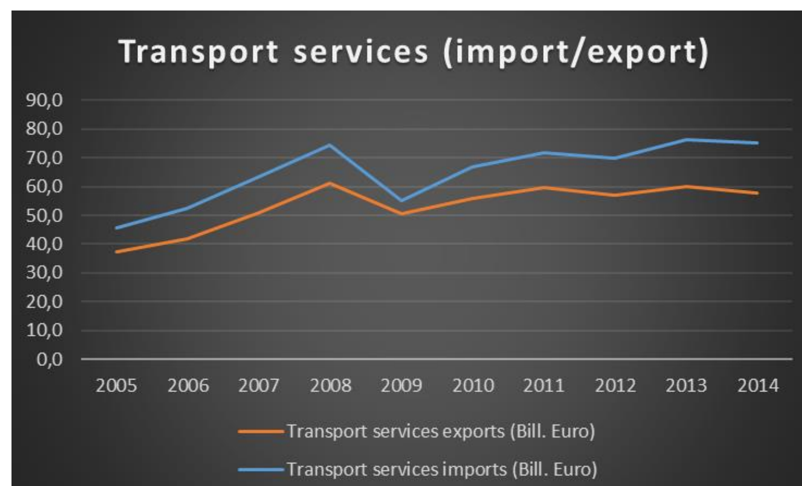
Germany:
Overview

Fast facts

GDP 2014 (Bill. Euro)	3.502
GDP per Capita (Euro)	36.107
Population 2014 (Mill.)	81
Rail network (km in 2009)	33.446
Road network (km in 2011)	643.702

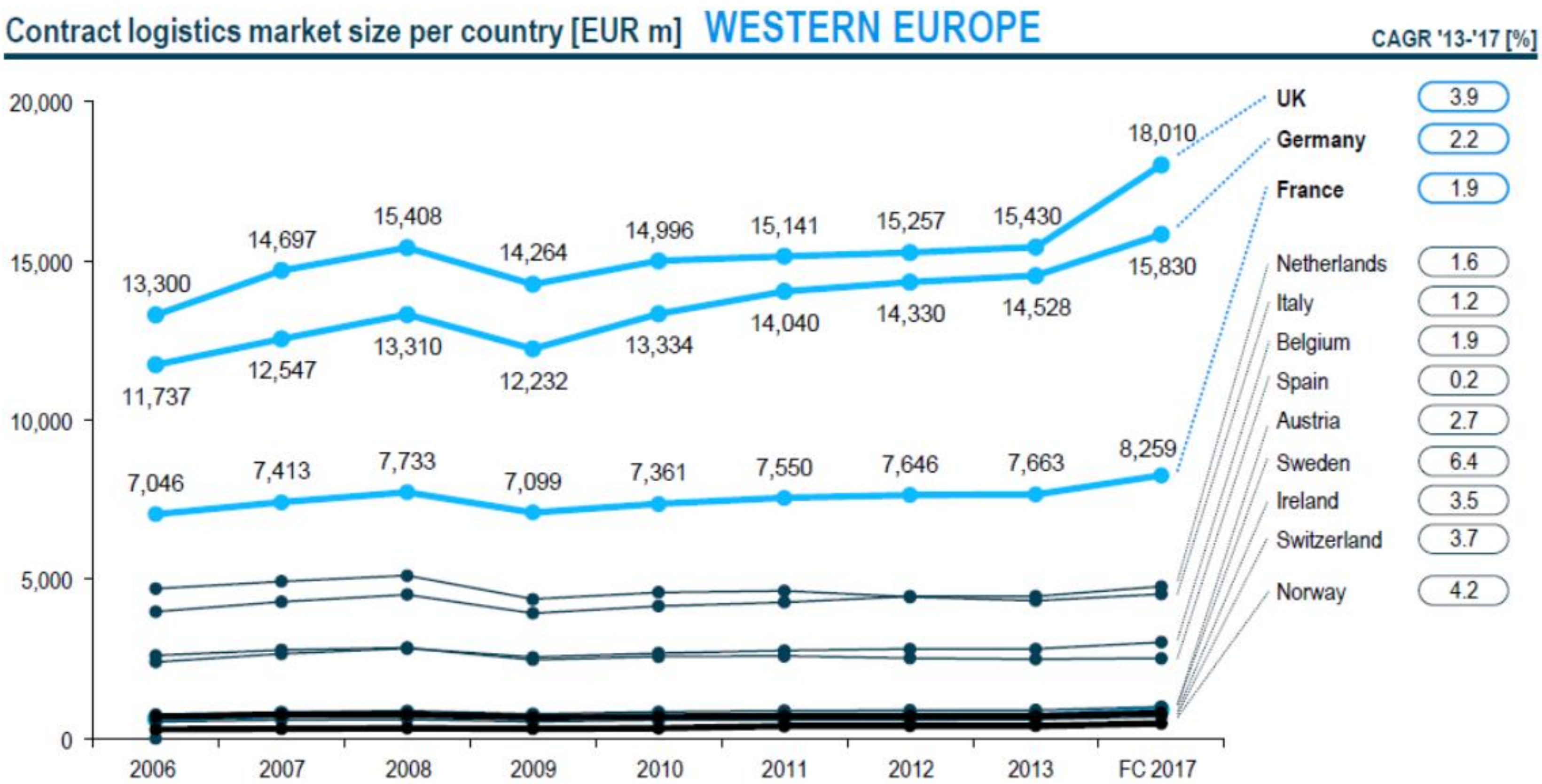






Source: WTO and WB

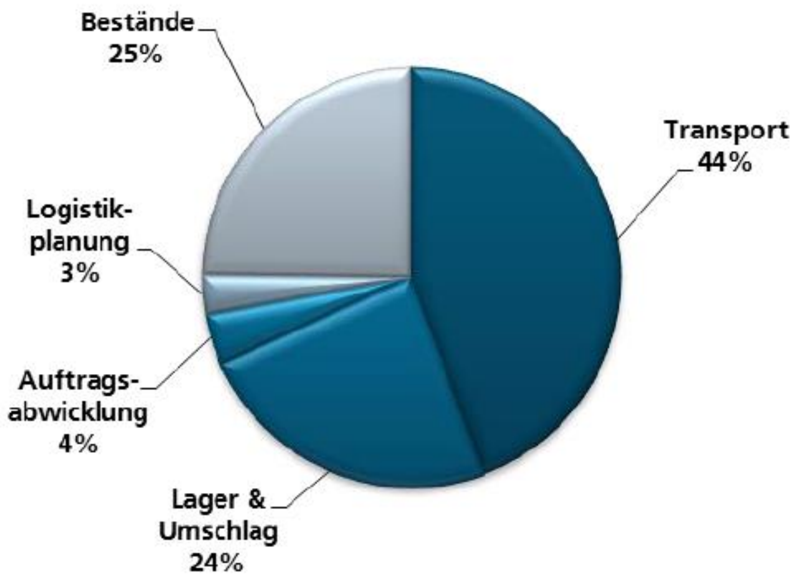
Germany:
Market size and development



Source: Roland Berger 2014

Germany:
Market size and development

Logistikumsätze nach Leistungsart in %



Source: Fraunhofer SCS, 2014

Germany:
Logistic service providers

Rank	Company	Data Quality	Logistics revenue 2014 in m. €	National employees	Logistics revenue 2014 in Europe in m. € (excluding »Mail«)	Notes
1	DEUTSCHE POST DHL (DE)	*	7,340	170,596	29,700	diversified
2	DB MOBILITY LOGISTICS (DE)	***	7,121	122,970	15,107	div., via DB SCHENKER LOGISTICS and DB SCHENKER RAIL
3	DACHSER (DE)	***	2,850	13,058	4,895	forw. / LTL / food log.
4	KUEHNE + NAGEL (CH)	***	2,623	n/a	11,745	forwarder / net forw. rev.
5	RHENUS (DE)	***	2,300	n/a	4,135	forwarder
6	VOLKSWAGEN KONZERNLOGISTIK (DE)	*	1,800	n/a	2,400	VOLKSWAGEN owned contract logistics
7	UPS EUROPE (BE)	*	1,700	18,000	6,000	CEP service provider
8	HERMES EUROPE (DE)	*	1,650	n/a	2,230	CEP, forwarding
9	GEOPOST (FR)	***	1,585	7,500	4,921	CEP, via DPD
	CARGOLINE (Cooperation) (DE)	***	*1,415*	*n/a*	*2,054*	*LTL cooperation*
	E.L.V.I.S. (Cooperation) (DE)	***	*1,388*	*n/a*	*2,018*	*part load network*
10	HELLMANN WORLDWIDE (DE)	***	1,364	n/a	1,810	forwarder
	Sum Top 10		30,333			
11	ARVATO (DE)	*	1,250	40,846	2,000	contract logistics
12	IMPERIAL LOGISTICS (DE)	***	1,210	4,982	1,560	forwarder / diversified
13	KRAFTVERKEHR NAGEL (DE)	**	1,200	n/a	1,700	chilled goods distribution
	IDS (Cooperation) (DE)	***	*1,192*	*n/a*	*1,800*	*LTL cooperation*
14	PANALPINA (CH)	***	1,032	n/a	2,159	forwarder / net forw. rev.
15	FIEGE LOGISTIK (DE)	*	1,000	n/a	1,400	contract logistics
	Sum Top 15		36,025			

Most of the largest logistic players in Germany do also have their headquarters in Germany, only UPS, GeoPost and K+N have their HQ abroad. The combined top 10 turnover is just over Euro 30 bn. and equals about 13% of the total German market.

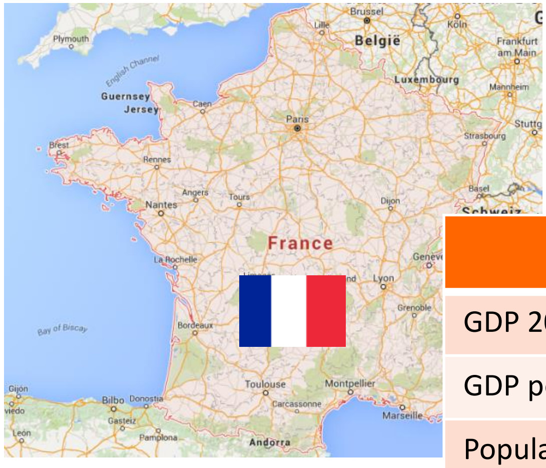
Source: Fraunhofer SCS, 2015

Germany:
Trends and challenges

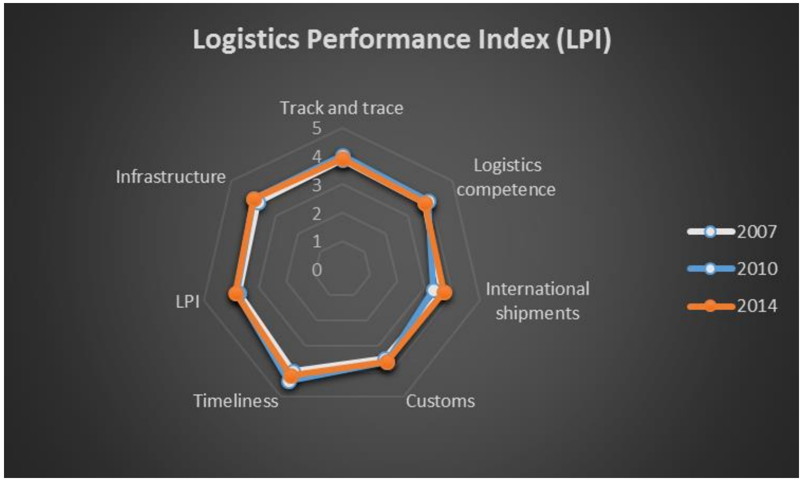
- As the evolution of Germany as a logistic location is highly dependable on the economy, the positive GDP forecast will also lead to increasing importance.
- Despite its well developed logistics infrastructure, investments are urgently needed, especially on ports to prepare for larger container vessels , rail to solve several bottleneck and road which in places over-crowded.
- Because of a lack of funding prioritizing (new) infrastructure projects is needed.
- General trends for the European Market:
  1. **Vertical integration**: when carriers and shippers increase profit pools by "conquering" additional parts of the value chain
  2. **Yield Decline** as shippers and carriers seek to exploit volatile freight rates to protect their own profit margins
  3. **Modal split** as demand shifts from air freight to predominately ocean and, increasingly, rail to reduce costs of supply chains
  4. **Volatility of freight rates** is increasing and demands greater sophistication in steering hedged capacities
  5. **Specialization and value added services** become key USPs as complex supply chains will call for specialized logistics service providers
  6. **Industry specific solutions** increasingly key, both in terms of IT and know-how, to meet complex customer demands
  7. **Shift in the trade landscape** with legacy trade lanes losing importance – emerging markets are new major trading nations
  8. **Hinterland connections** efficiency is of increasing importance – and even an entry condition for business with Chinese shippers
  9. **Contract logistics** – challenges from the tendency toward shorter contract lifecycles will increase hurdles to achieve an appropriate ROI
  10. **Globalization** vs. regionalization: demand will either grow for "global total solutions" or revert back to regionalization

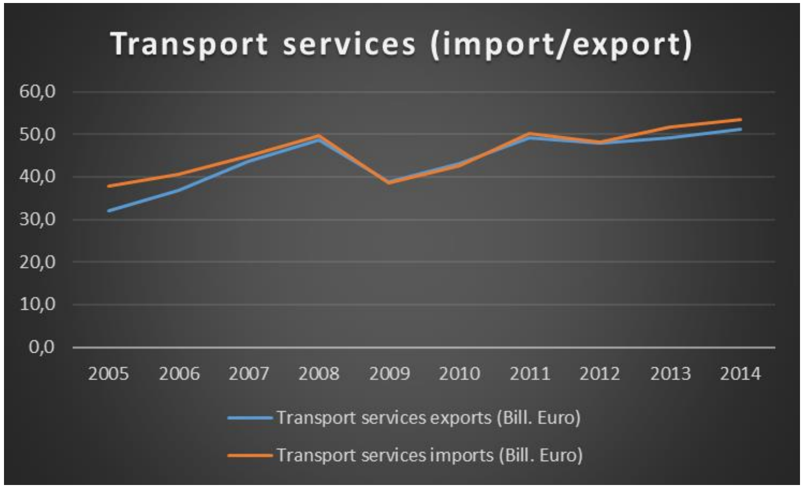
Source: Fraunhofer SCS, 2015 & Roland Berger 2014

France:
Overview



Fast facts	
GDP 2014 (Bill. Euro)	2.572
GDP per Capita (Euro)	32.424
Population 2014 (Mill.)	66
Rail network (km in 2009)	30.013
Road network (km in 2011)	1.052.380

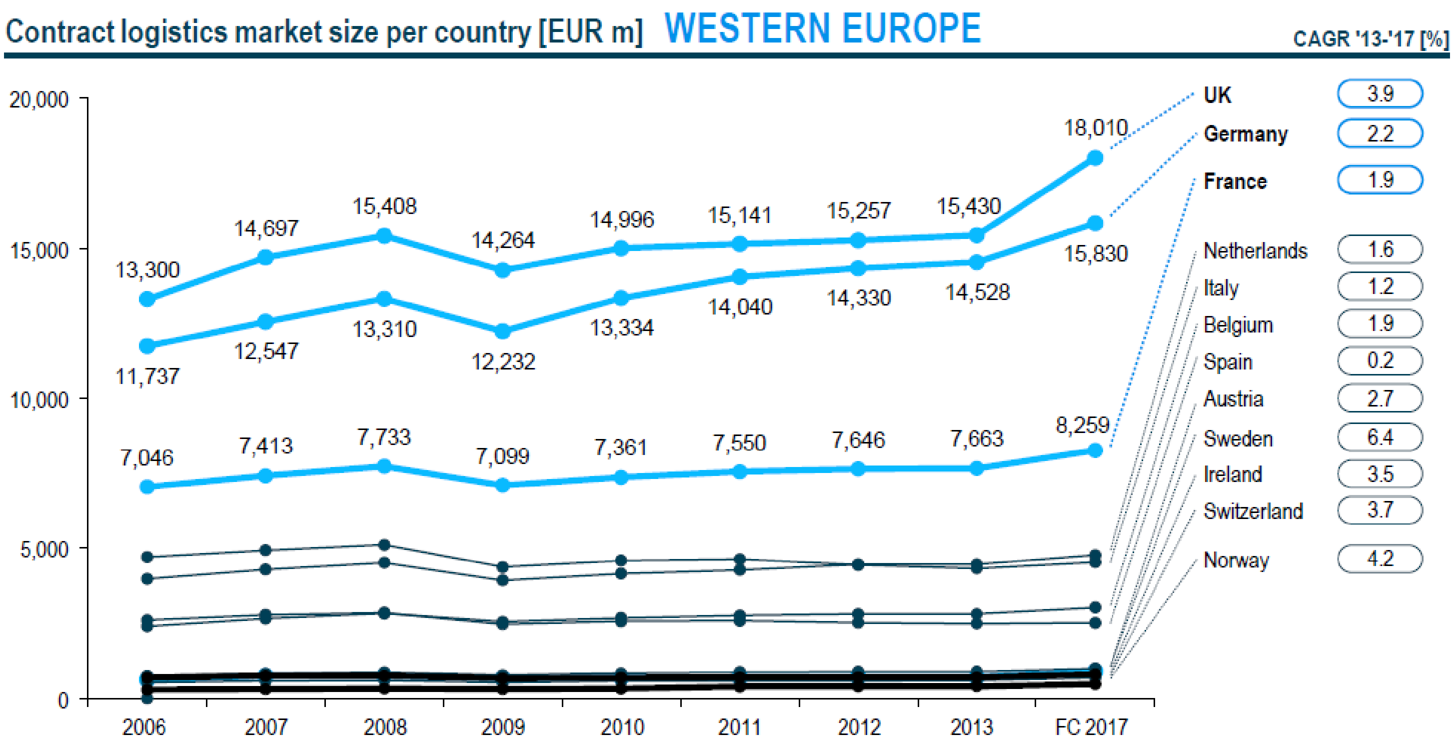




Source: WTO and WB

France:

Market size and development



Source: Roland Berger 2014

France:

Logistic service providers

Rank	Company	Data Quality	Logistics revenue 2014 in m. €	National employees	Logistics revenue 2014 in Europe in m. € (excluding »Mail«)	Notes
1	SNCF (FR)	**	4,880	n/a	9,041	rail cargo / forwarder, via GEODIS CALBERSON
2	CMA-CGM (FR)	*	3,450	n/a	n/a	ocean cargo
3	LA POSTE (GROUP) (FR)	**	3,385	n/a	7,180	CEP, also via GEOPOST
4	STEF (FR)	***	2,162	12,735	2,370	contract logistics / food
5	GEFCO (FR)	*	2,137	n/a	3,037	diversified
6	XPO LOGISTICS (UK)	***	1,690	n/a	4,400	forwarder, formerly NORBERT DENTRESSANGLE
7	BOLLORÉ HOLDING (FR)	***	1,689	5,034	2,252	forwarder
	ASTRE GROUP (Cooperation) (FR)	*	*1,435*	*n/a*	*1,435*	*forwarder*
8	DB MOBILITY LOGISTICS (DE)	***	1,386	7,222	15,107	div., via DB SCHENKER LOGISTICS and DB SCHENKER RAIL
9	DEUTSCHE POST DHL (DE)	*	1,350	n/a	29,700	diversified
10	KUEHNE + NAGEL (CH)	***	1,247	n/a	11,745	forwarder
	Sum Top 10		23,376			
11	TNT EXPRESS (NL)	***	736	4,443	2,743	CEP service provider
12	DACHSER (DE)	***	717	n/a	4,895	forw. / LTL / food log., former GRAVELEAU
13	UPS EUROPE (BE)	*	698	2,500	6,000	CEP service provider
14	EASYDIS (FR)	***	548	n/a	548	FMCG distribution
15	CAT GROUP (FR)	*	530		1,024	automotive contract log.
	Sum Top 15		26,605			

The France logistics market is dominated is by France companies. The top 5 only contains France LSP's which are supported by a protective government. As in many countries the national railway company leads the list.

Source: Fraunhofer SCS, 2015

France:
Trends and challenges

- The national government is demanding increasing awareness of the environment in logistic. For example a leading initiative is “Distripolis”, a city logistics concept executed by Geodis on now rolled out to many France and maybe other European cities.
- In 2017 the new channel Seine-Nord (CSNE) will be opened offering an alternative freight route between Paris/ La Havre and Belgium/ Netherlands/ Germany
- Next to increasing awareness France government also stimulates alternative freight transportation with the aim to reduce road freight transport.
- General trends for the European Market:
  1. **Vertical integration**: when carriers and shippers increase profit pools by "conquering" additional parts of the value chain
  2. **Yield Decline** as shippers and carriers seek to exploit volatile freight rates to protect their own profit margins
  3. **Modal split** as demand shifts from air freight to predominately ocean and, increasingly, rail to reduce costs of supply chains
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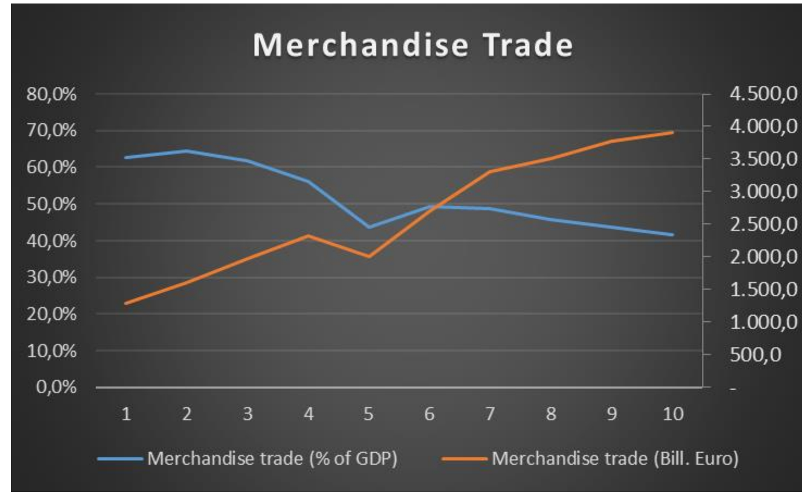
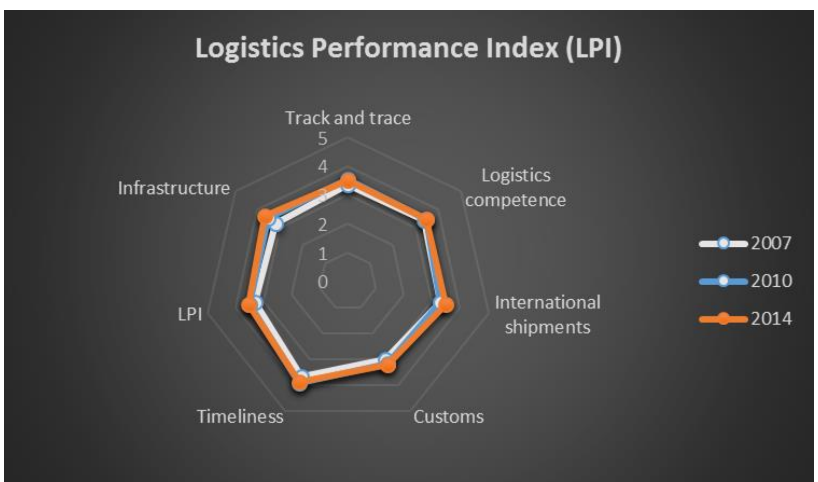
  6. **Industry specific solutions** increasingly key, both in terms of IT and know-how, to meet complex customer demands
  7. **Shift in the trade landscape** with legacy trade lanes losing importance – emerging markets are new major trading nations
  8. **Hinterland connections** efficiency is of increasing importance – and even an entry condition for business with Chinese shippers
  9. **Contract logistics** – challenges from the tendency toward shorter contract lifecycles will increase hurdles to achieve an appropriate ROI
  10. **Globalization** vs. regionalization: demand will either grow for "global total solutions" or revert back to regionalization

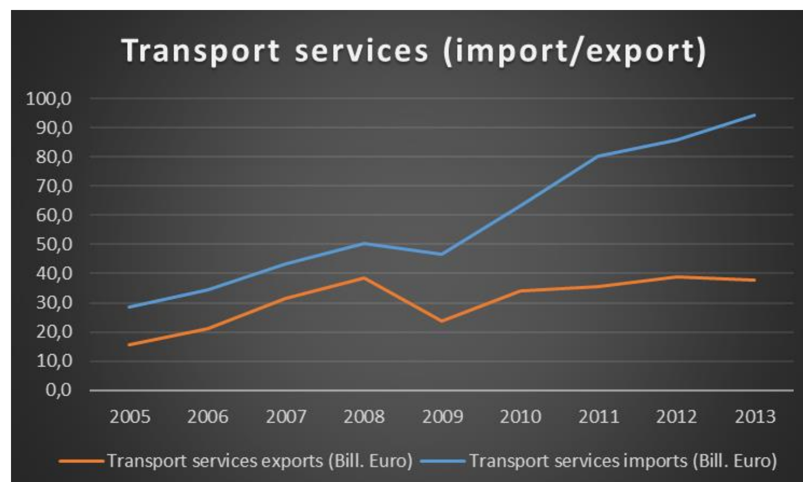
Source: Fraunhofer SCS, 2015 & Roland Berger 2014

China:
Overview

Fastfacts	
GDP 2014 (Bill. Euro)	9.418
GDP per Capita (Euro)	150
Population 2014 (Mill.)	1.364
Railnetwork (km in 2009)	66.298
Roadnetwork(km in 2011)	4.106.387

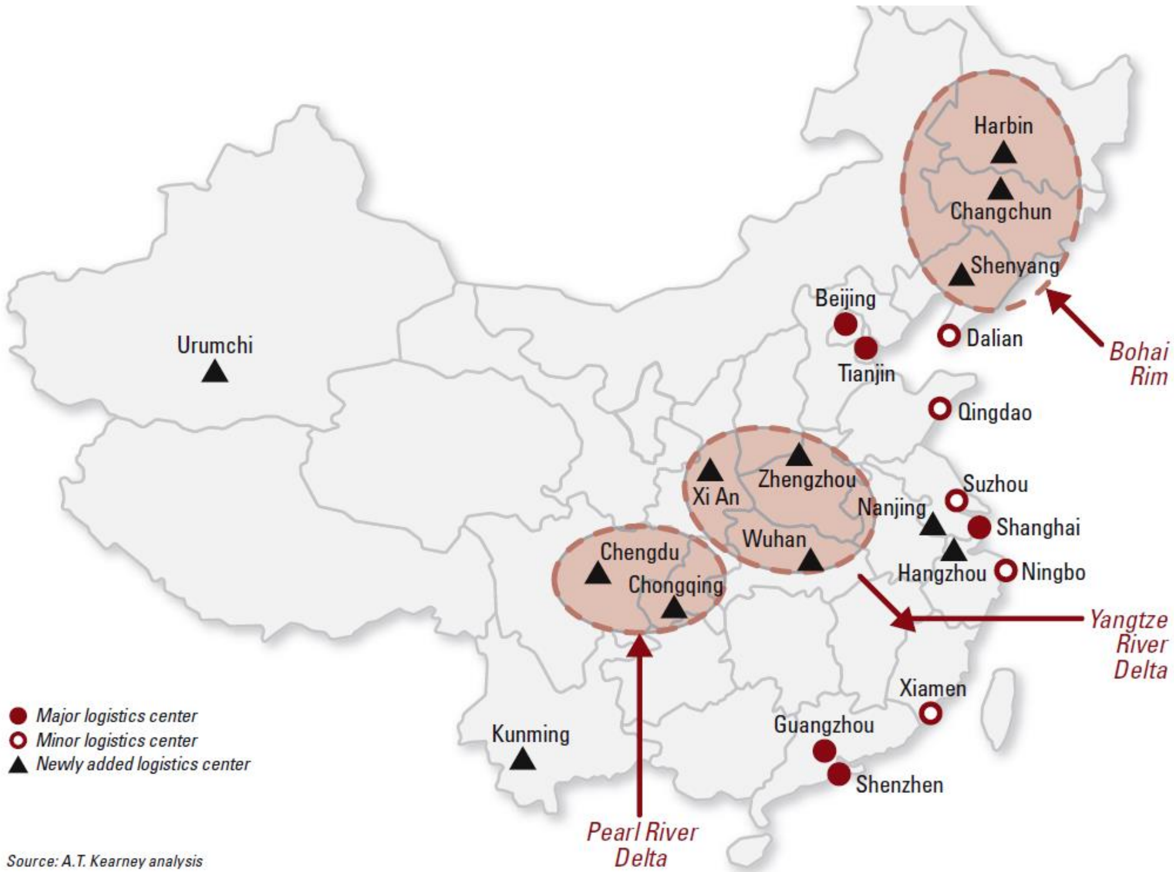






Source: WTO and WB

China:
Hinterland



Especially in the regions with newly added logistics centers new roads will increase the need for transportation and logistics.

China:
Hinterland connections

Road: Road transport is the major freight transport mode in China. In 2012, over 75% of cargo is transported by road. About one-third of transport costs in China are road tolls. Excessive highway tolls and price increases of fuel and labour reduce profitability of logistics companies considerable

Rail: The Chinese Railway has been reformed in 2013 by introducing the China Railway Corporation (CRC) which is now responsible for all commercial activities. Some of most important changes are; a cargo plan is no longer required, handling charges are standardized, there are more business resources for handling high-value products and daily necessities and door to door service (instead of only station to station) is now available

Inland waterway: With a navigable length of 123,495 km, China's inland water transport network is the largest in the world in length and in volume of cargo. It consists of more than 5,000 rivers, of which the 6,300-km Yangtze and its tributaries is the longest

Freight traffic in China (million tonnes)

	2010	% total	2011	% total	2012	% total
Road	24.481	76%	28.201	76%	31.885	78%
Rail	3.643	11%	3.933	11%	3.904	10%
Air	6	0%	6	0%	6	0%
Water	3.789	12%	426	1%	4.587	11%
Pipeline	500	2%	571	2%	612	1%
Total	***32.418***	***100%***	***36.970***	***100%***	***40.994***	***100%***

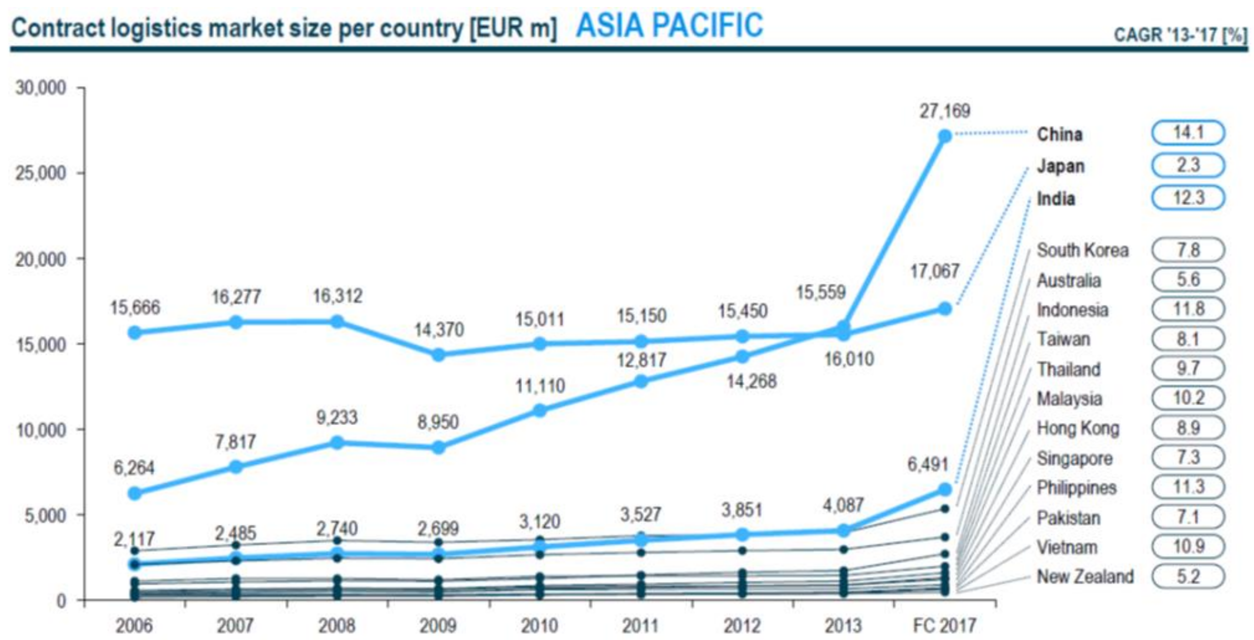
Source: Fung Business Intelligence Centre, 2013

China:
Top Logistic service providers

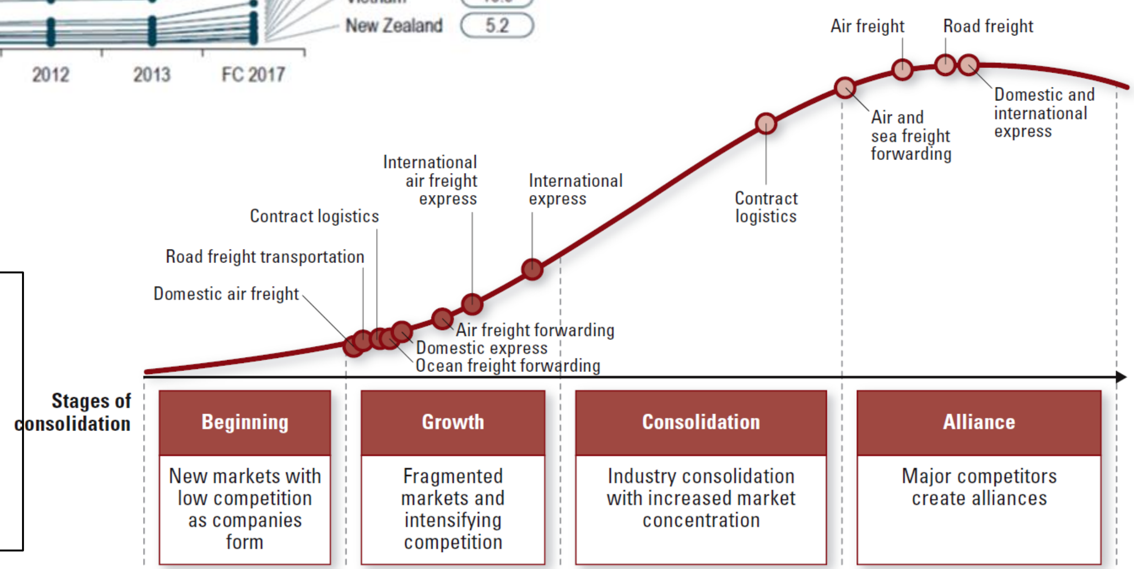
Nr.	Name	Revenue (Euro) Million
1	China ocean shipping (group) corporation,	14.946
2	Sinotrans changhang group co., LTD.,	10.232
3	China Shipping (group) corporation	6.372
4	Kailuan group international logistics co., LTD.	3.925
5	China material storage and transportation corporation	2.535
6	Xiamen xiangyu group co., LTD.	2.426
7	China railway materials group co., LTD.	2.012
8	Yizhong energy fengfeng group Hangdan Dingfeng logistics co., LTD.,	1.594
9	Chinese oil and gas transportation company	1.430
10	Henan coal chemical industry group the kingdom dragon logistics co., LTD.	1.259

China:

Market size and development



Despite Chinese extraordinary success, China's transportation and logistics industry as a whole remains in the early stage of development



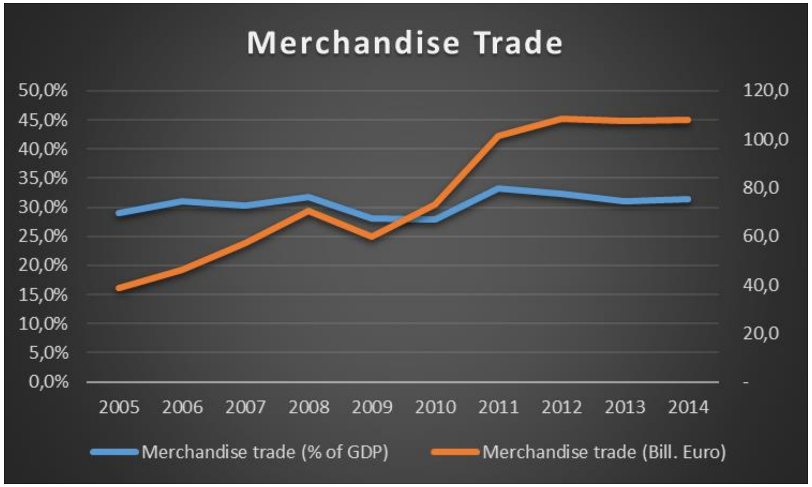
China:
Trends and challenges

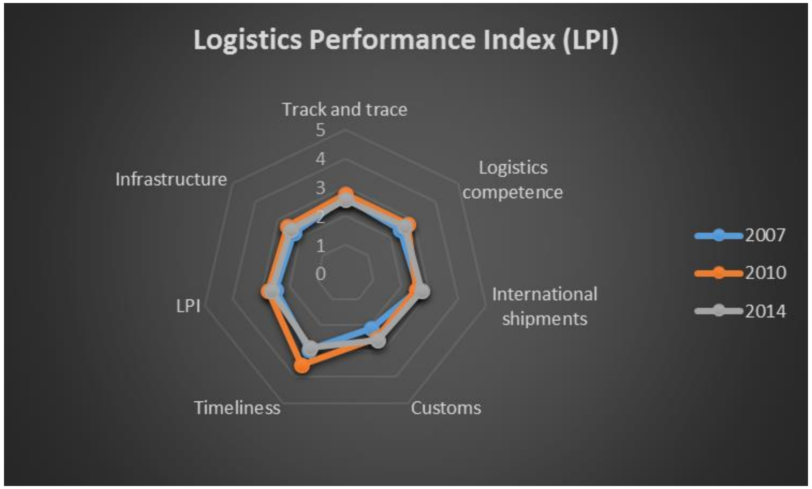
- Especially in the regions with newly added logistics centers new roads will increase the need for transportation and logistics.
- Companies' distribution models are moving from dealership models to multi-channel and direct sale models requiring higher density network with quicker response times
- Low carbon rules will force transportation and logistics companies to make environmental protection a primary goal
- Chinese shipping companies increasingly viewing logistics as strategic area that can provide key competitive advantage and therefore setting higher requirements on service levels and offerings

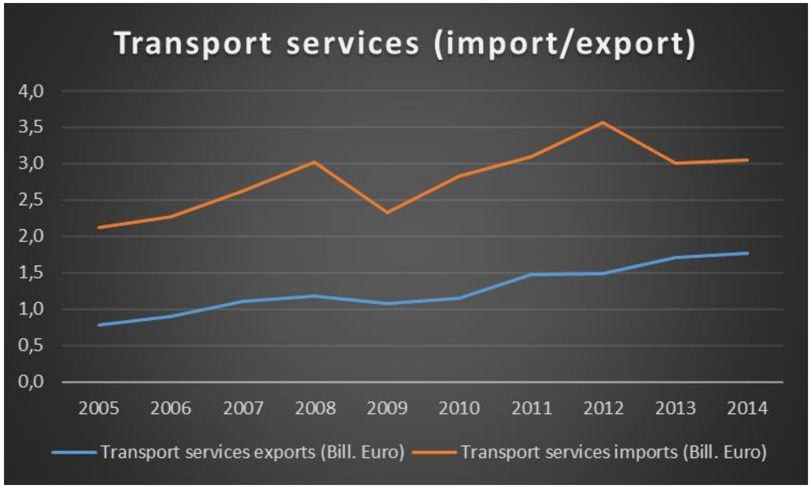
Colombia:
Overview

Fast facts

GDP 2014 (Bill. Euro)	343
GDP per Capita (Euro)	4.234
Population 2014 (Mill.)	48
Rail network (km in 2009)	1672
Road network (km in 2011)	214.433







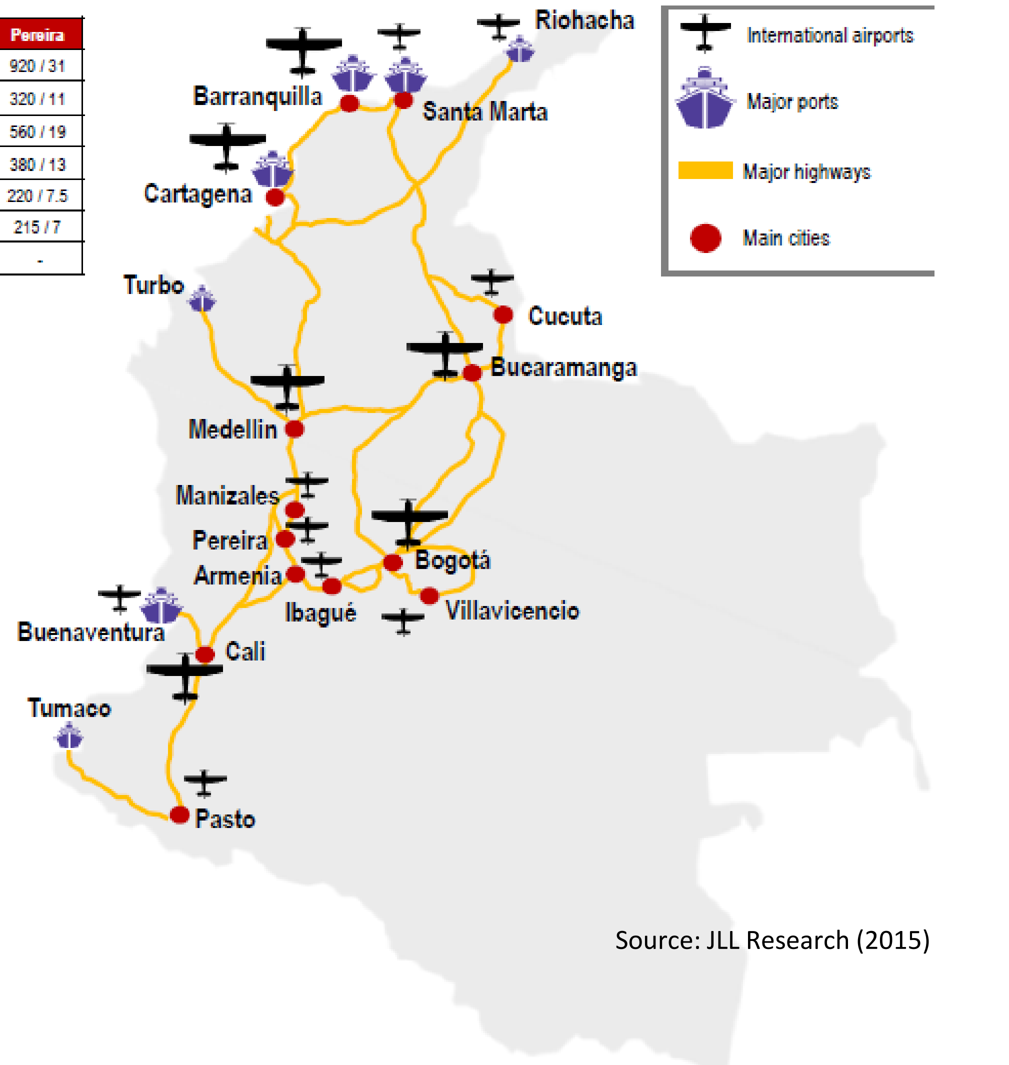
Source: WTO and WB

Colombia:
Connections

Road Travel Times to Major Colombian Cities (kilometers / hours)

	Barranquilla	Bogotá	Bucaramanga	Buenaventura	Cali	Medellín	Pereira
Barranquilla	-	990 / 33	580 / 19	1,170 / 39	1,120 / 37	700 / 24	920 / 31
Bogotá	990 / 33	-	410 / 10	520 / 18	470 / 16	450 / 15	320 / 11
Bucaramanga	580 / 19	410 / 14	-	820 / 28	770 / 26	410 / 14	560 / 19
Buenaventura	1,170 / 39	520 / 18	820 / 28	-	130 / 4.5	480 / 16	380 / 13
Cali	1,120 / 37	470 / 16	770 / 26	130 / 4.5	-	430 / 15	220 / 7.5
Medellín	700 / 24	450 / 15	410 / 14	480 / 16	430 / 15	-	215 / 7
Pereira	920 / 31	320 / 11	560 / 19	380 / 13	220 / 7.5	215 / 7	-

- Bogotá's El Dorado Airport is Latin America's busiest cargo airport.
- Colombia's highway network is largely outdated and in poor condition, heavy rains complicate this problem
- Over 90% of all imports and exports are transported by sea. Colombia's largest port is Buenaventura, (8,5m Tons) Other large ports are; Cartagena (7,1m tons) Santa Marta (3,3m tons) and Barranquilla (3.3m tons)
- Colombia is investing until 2020 about USD 50 billion in improving infrastructure (26 for road, 10 for railways, 8 for urban transport, 3 for port and 3 for inland waterways



Source: JLL Research (2015)

Colombia:
Hinterland

Only 1.5% of Colombia's freight is transported under a multimodal scheme, a very low figure compared to the 60 per cent rate achieved by European countries. Freight accounts for 35 per cent of the cost of exported goods, when in the rest of the world, that figure stands at just 6 per cent. Today,

- ***Road***: Approximately 75% of all roads are paved, but the quality varies significantly from region to region. Estimates indicate that 50% of all roads are in poor condition. Transporting a container from Bogota to othe national ports costs $ 2,200, whereas shipping it from there to China costs only $ 1,000
- ***Rail:*** The railways have been built to connect the main cities to the Magdalena River and key ports, Colombia's, but the system is now mostly inactive. In 1986 the government decided that the only way to avoid complete closure of the rail network was to shut down all but a few links Although 20% of Colombia's cargo is still moved by rail but 99% of this is coal.
- ***Inland waterway***: The Magdalena River is the principal river of Colombia, flowing northward about 1,500 kilometres through the western half of the country. It is navigable through much of its lower reaches, but once the highways became the predominant logistical mode of no significant importance anymore. The government is now looking to make it navigable for 7,000ton ships by 2030. Recently a concession was granted to begin work. Besides the Magdalena River it is also to makes the Rivers Meta, Putumayo, Guaviare partly navigable

Source: JLL Research (2015) & Colombian Chamber of Infrastructure

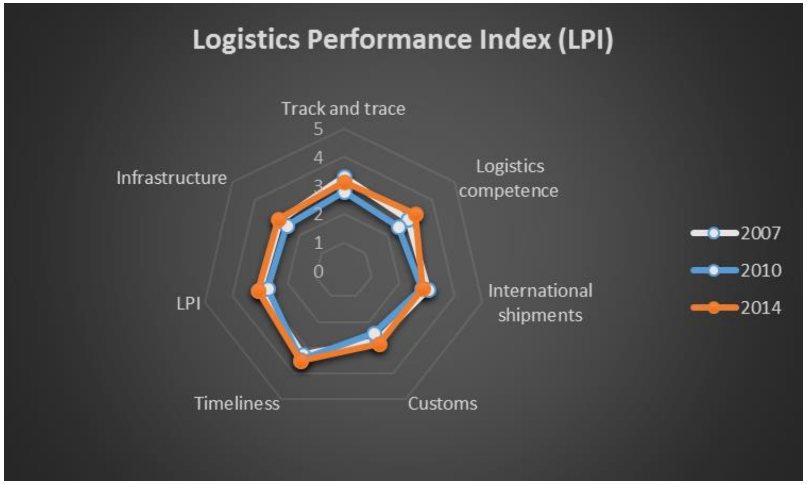
Colombia:
Trends and challenges

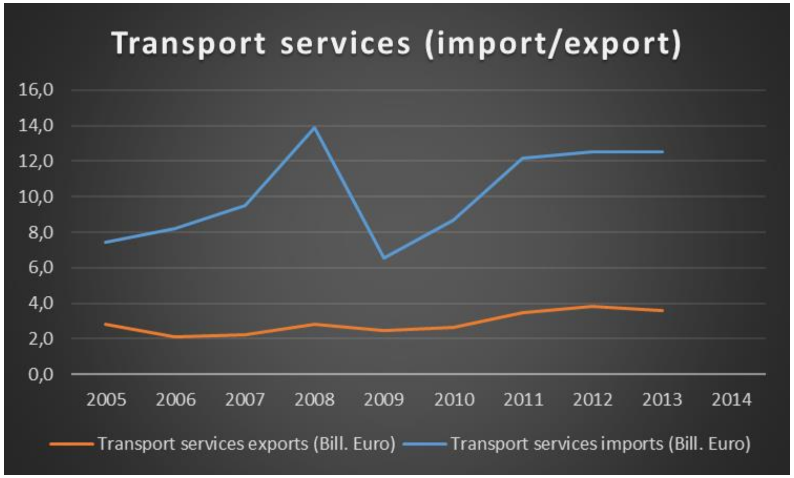
- The gap between business conditions (as expressed by market compatibility) and Colombia’s market size, growth attractiveness and connectedness is striking.
- Despite increased investment in developing road infrastructure and defining an institutional structure, Colombia needs to diversify its transportation modal matrix (including rail and river transport) and optimize the use of its logistics assets

Source: Agility Emerging Markets Logistics Index, 2015

Indonesia:
Overview

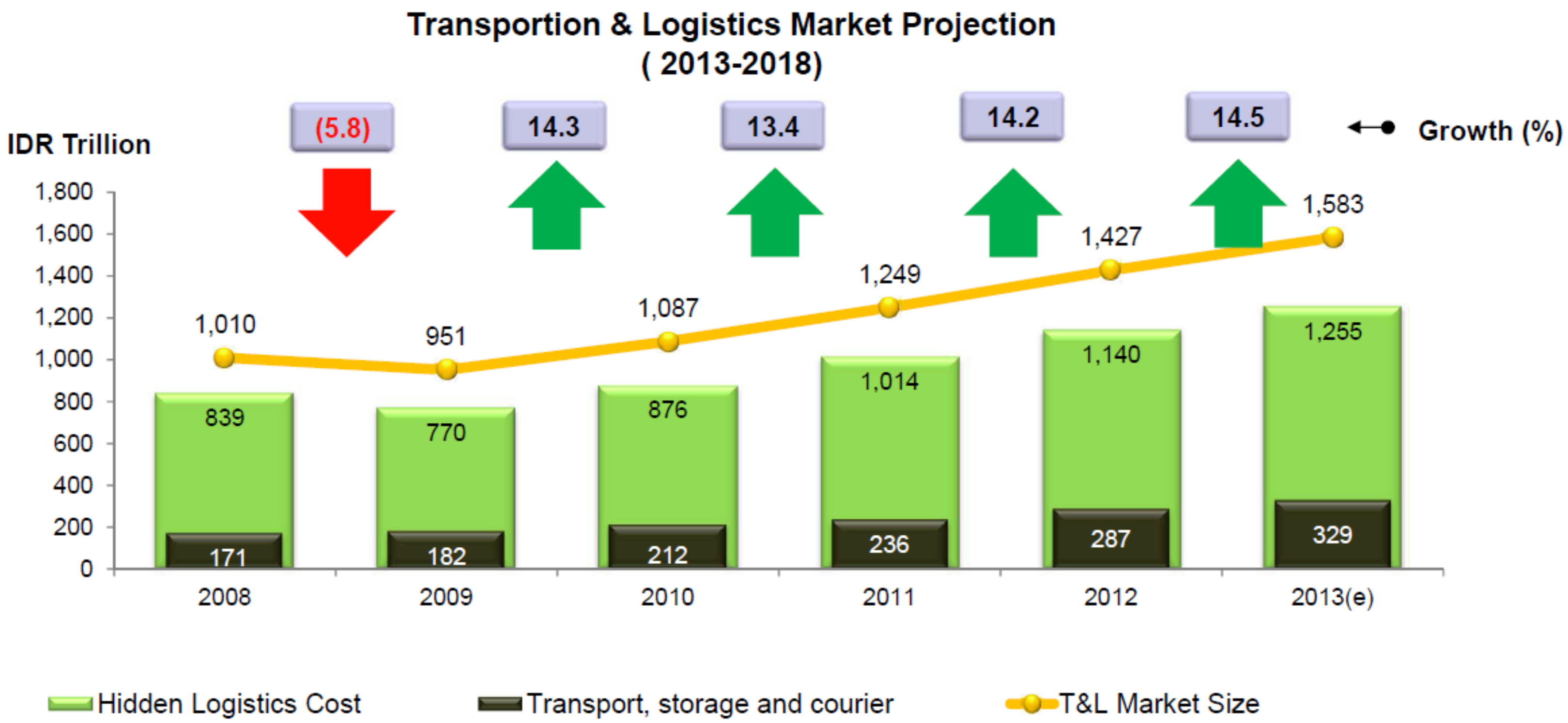
Fast facts	
GDP 2014 (Bill. Euro)	808
GDP per Capita (Euro)	1.685
Population 2014 (Mill.)	254
Rail network (km in 2009)	4.684
Road network (km in 2011)	496.607





Source: WTO and WB

Indonesia:
Market size and development

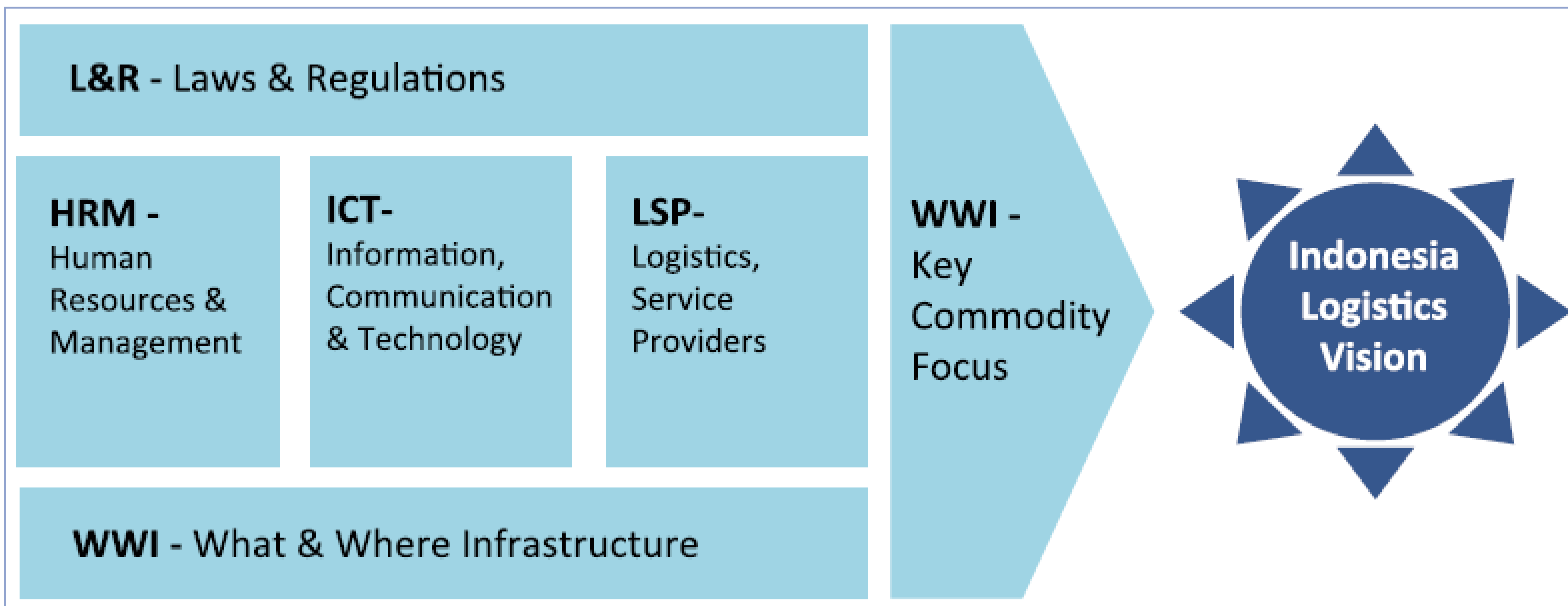


Source: Indonesian Statistical Agency

Indonesia:
Trends and challenges

To enhance its logistics industry Indonesia is developing a National Logistics System which is program running until 2025, the main goal is to to establish an integrated, effective and efficient logistics system to improve the national competitiveness on the regional and global markets, and to improve social welfare.

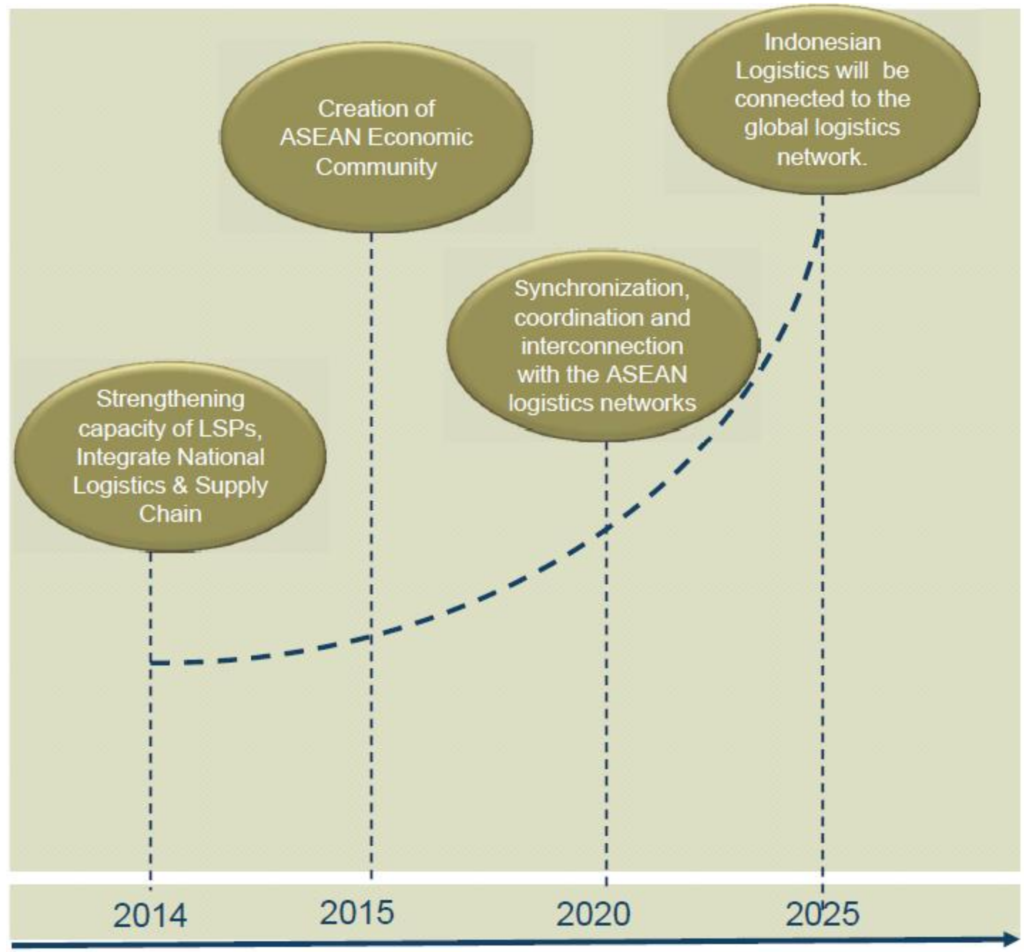
Key Drivers for the National Logistics System



Indonesia:
Trends and challenges

Main goals:

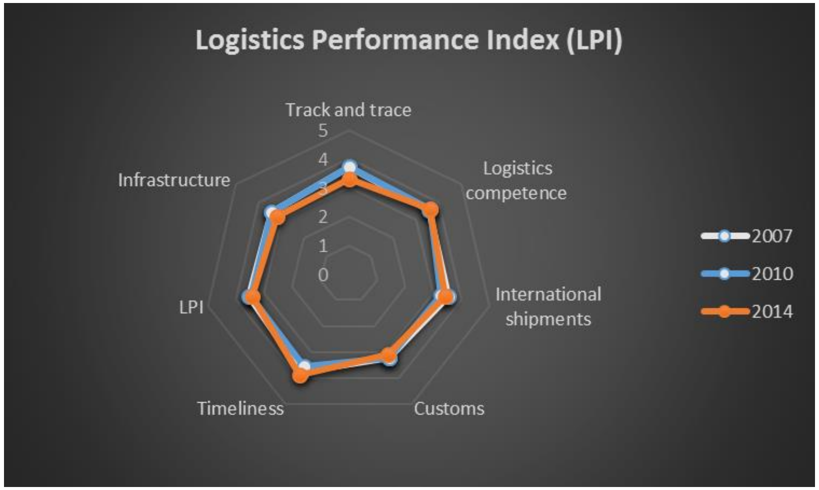
- 2014-2015: Infrastructure development among ASEAN countries are expanded to support the transportation & logistics service in the region
- 2015-2020: ASEAN Logistics Network Integration
- 2020-2025: Integrated Global Logistics Network. Indonesia will be connected to the regional (ASEAN) and global logistics systems via International Hub Ports

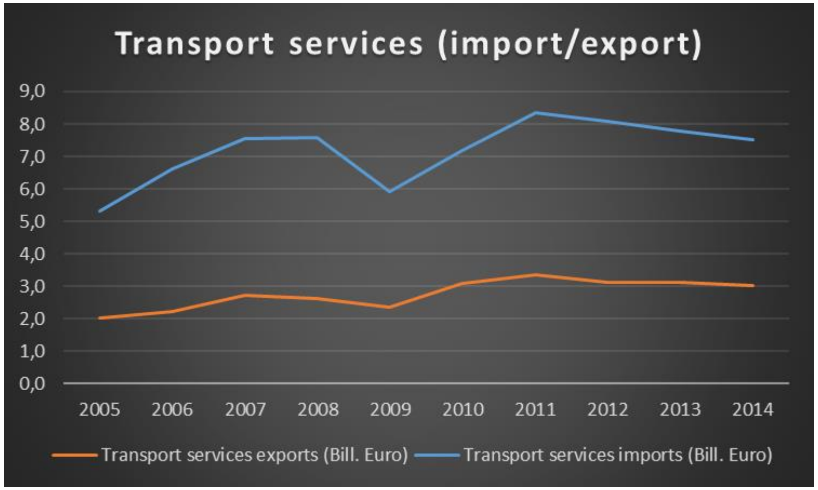


Source: Frost & Sullivan Analysis

South Africa:
Overview

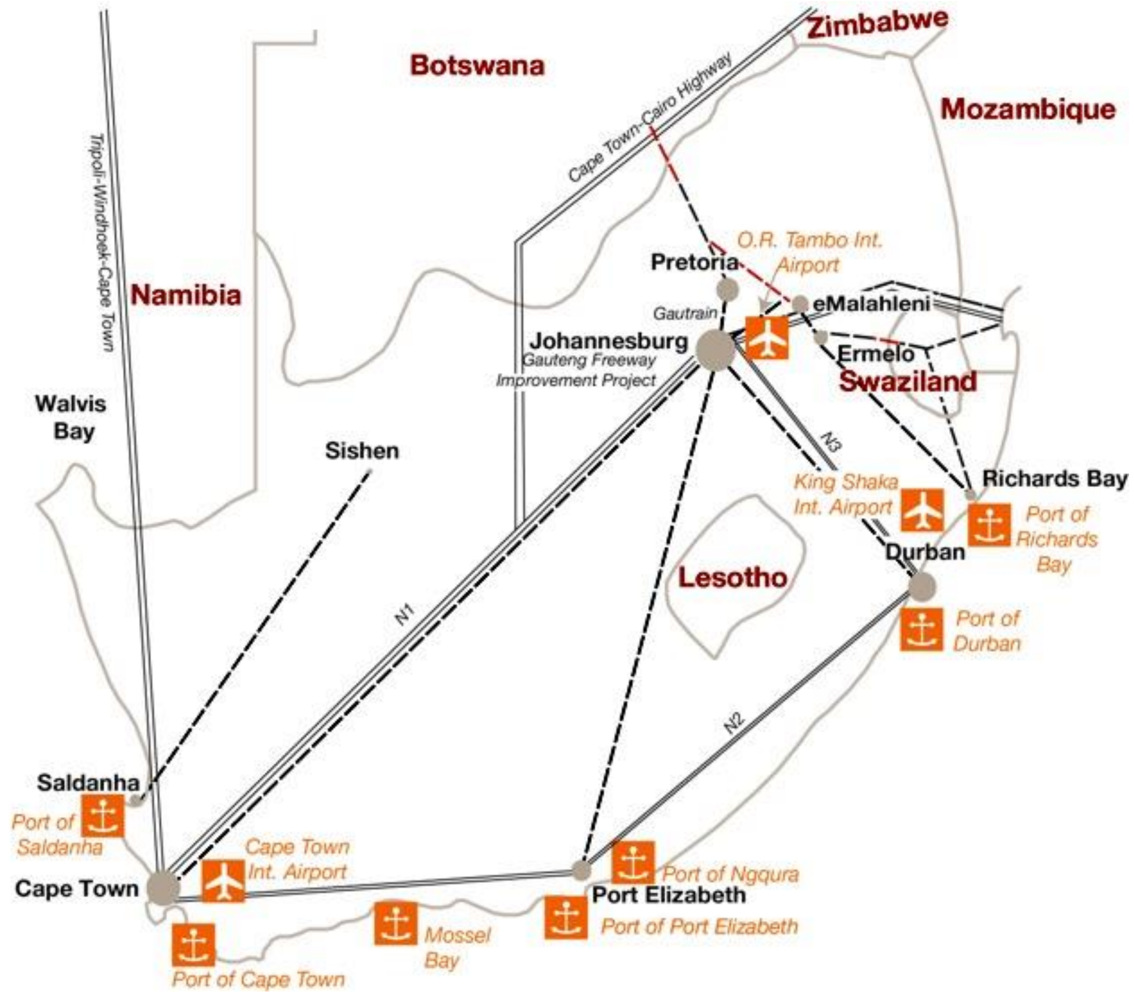
Fast facts	
GDP 2014 (Bill. Euro)	318
GDP per Capita (Euro)	5.533
Population 2014 (Mill.)	54
Rail network (km in 2009)	20.500
Road network (km in 2011)	-





Source: WTO and WB

South Africa:
Connection

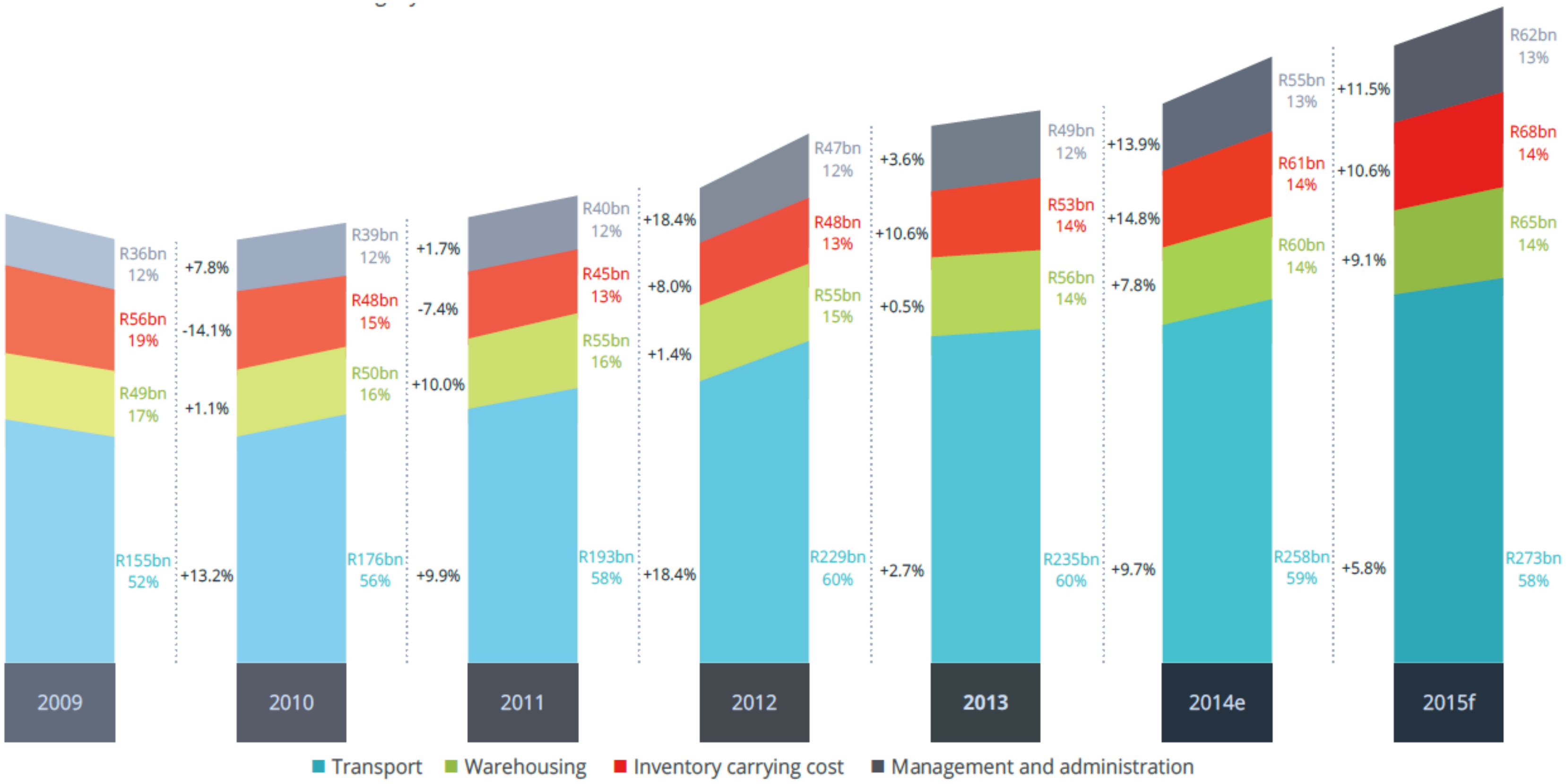


South Africa has the largest economy in Africa and is the most developed in Sub-Saharan Africa with the most advanced transport infrastructure. As a member of the BRICS countries, South is recognised as a key emerging market.

The need to move goods to inland centers of commerce have created a transport-intensive domestic economy. South Africa's logistics costs as a percentage of GDP in 2013 was 11.1% which is higher than developed countries but competitive when compared to other developing regions.

The air and rail networks are the largest on the continent. The major national roads are in good condition, but the provincial road networks have deteriorated considerably. South African port efficiency has improved considerably as a result on investment in new assets such as ship to shore cranes and other supporting handling equipment.

South Africa:
Market size and development



Source: Stellenbosch University, 2015

South Africa:
Logistic service providers

- **Barloworld:** Barloworld Logistics is one of the leading logistics and supply chain management businesses in southern Africa, with complementary operations in China, the United Arab Emirates, Iberia, Germany and the United Kingdom.
- **Jonen Freight (Pty) Ltd.** is an independent South African owned company who has been on the local market since 1979. They are one of the oldest of the medium sized freight forwarders on the South African market today
- **Logwin** offers complete full service solutions. The service portfolio extends from branch-appropriate supply chain management and warehousing through to logistical value-added services to complete outsourcing projects. The business segment Solutions thereby has a high level of competence in process control and the development of customised IT solutions.
- Managed Freight developed an online **freight management consultancy** to provide companies with an alternative to existing services and logistics service provider selection. Most of our clients are small to medium businesses that require support in their shipping department and do not have the volume to negotiate preferable terms and rates.

South Africa:
Trends and challenges

- in South Africa, there is much to be done about reducing the demand for logistics – in other words reducing the kilometres travelled by each tonne, how long it is stored and how often it is handled.
- A major objective is to achieve sustainable funding and maintenance for the infrastructure used by each transport mode.
- Reducing the monetary cost of logistics is an important goal but equally important is the reduction in societal costs such as emissions.
- More general Supply Chain challenges in S-A are:
  - Improving service levels to customers
  - Integration of technology
  - Lowering procurement costs and reducing order lead times
  - Improving visibility in the supply chain
  - Improving the flow of business intelligence
  - Aligning with key players in the supply chain.

Source: Council for Scientific and Industrial Research (CSIR), 2014 & Stellenbosch University, 2015

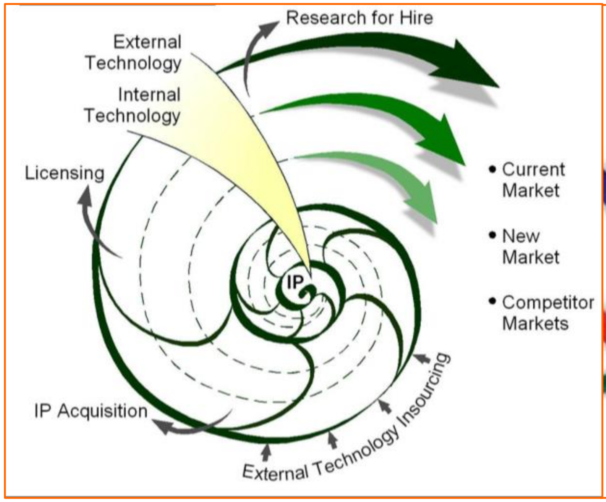
HINTERLAND LOGISTICS EXPERTISE IN THE NETHERLANDS

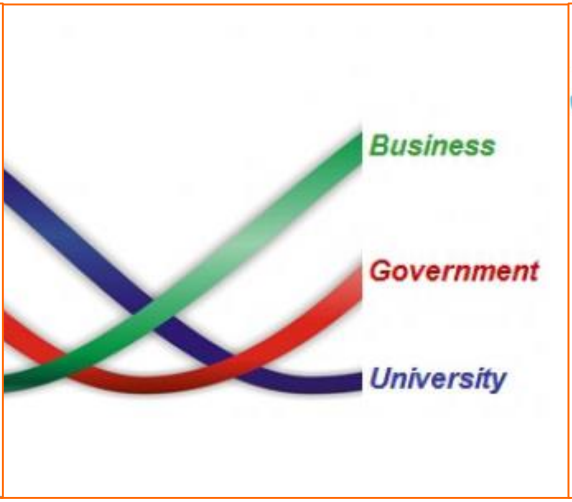
Dutch collaborative innovation in logistics

1.
Open innovation

2.
Public private partnerships: triple helix collaboration

3.
Supply chain collaboration and coordination





Hinterland logistics in the Netherlands

- The Netherlands has a strong position in Hinterland logistics.
- LSP's, including Seacon Logistics, Samskip van Dieren and Ewals, particpated in synchromdal pilots
- IT Companies, including global players as Ortec and a broad range of smaller companies specialized in chain optimization such as Caroz, Gordian and Greenway Logistics, offer a broad range of IT solutions to manage supply chains.
- Dutch universities have also carried out international trend setting research in the area of Hinterland Logistics and Control Towers. Research is carried out together with industry leading to knowledge intensive practical solutions.
- Dutch education institutes offer highly skilled graduates.

The Netherlands has high level knowledge on how to develop and operate hinterland networks

- Plan from collaboration
- Operational aspects
- Integration of IT, Plug&play
- Collaborative planning.

Supply Chain Collaboration tool, TKI Dinalog

Service providers Hinterland Logistics

Software and tools	Synchromodal services
Quintiq	EGS
Inforit/CQM consultancy	GEBA Trans
Cofano Software Solutions	Samskip
Yellowstar Solutions	Contargo
Ortec	Greenway Logistics
Inlandlinks	
Wayz	
CoSo	
Caroz	
Centric	

Some examples on next slides

Platforms
Some examples

Modalities

RAILCARGO ONLINE.COM

- market place for inland shipping in Europe
- Supply and demand of cargoes and barge

Bargelink.com

- Directing freight flows through synchromodal network
- Connecting transport – financial – trade information
- Experience in real life

Sector cooperation

HubWays

- Platform offering connections between al logistic partners in floriculture sector
- Open messaging standards for the electronic exchange of commercial, logistical and financial information

Ports

portbase

- Portbase Port Community System (PCS) is the digital connection to smart Dutch ports.
- PCS has almost national coverage and is available for all port sectors: containers, general cargo, dry bulk and liquid bulk.
- Everyone in the logistics chain can exchange information via PCS easily and efficiently.

Airports

CARGONAUT

- Front runner in information services for the air cargo industry
- Open platform for good, correct and timely data exchange for parties in the logistics chain at the airport and if necessary also beyond.

CASES

Optimizing freight flows in the hinterland network

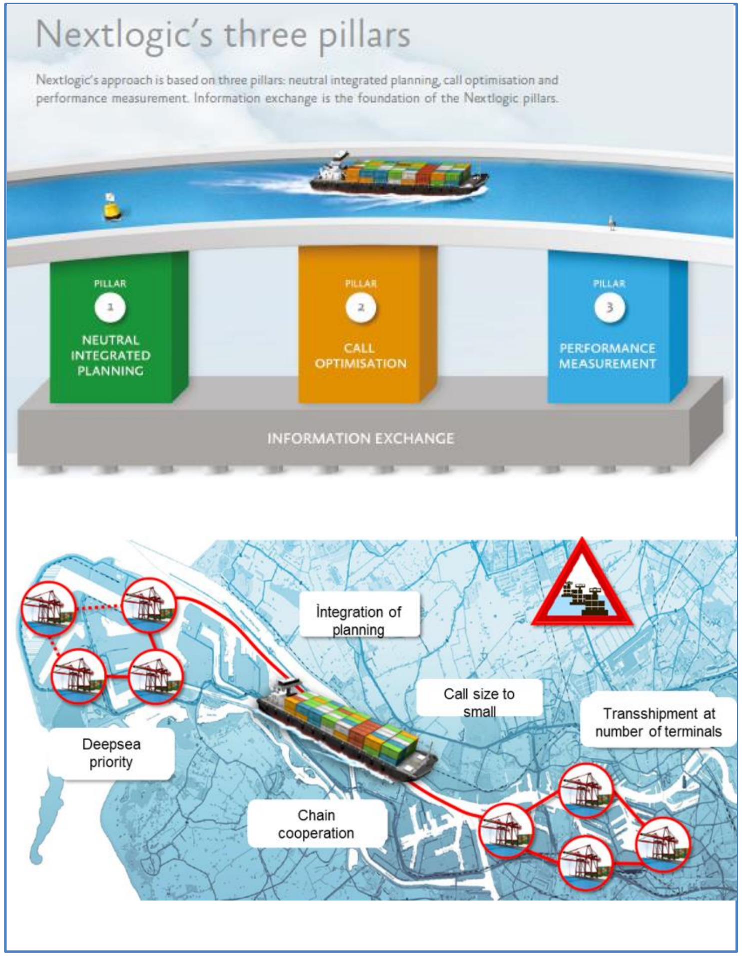
NEXTLOGIC
chain optimisation inland container shipping

Nextlogic is a project of the Port of Rotterdam Authority, the Ministry of Transport, deep sea terminals, depots, barge operators/inland terminals and shipping companies

unreliable and unpredictable turnaround time of barges at deep sea terminals, inefficient use of the quays, cranes and barges and to many (small) calls in the sea port.

Information exchange with extension of the Port Community System based on neutral integrated planning, call optimisation and performance measurement.

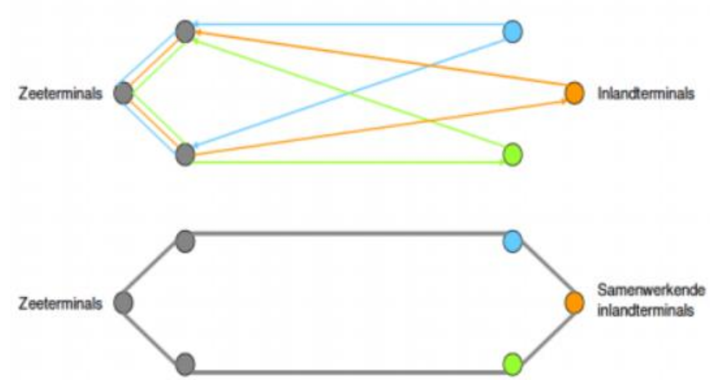
Extensive cooperation.



Platforms Bargecloud

Cooperation between inland container terminals

Bargecloud	Cooperation between inland terminals in the Southern parts of the Netherlands With support of tools for ordering, calls en tripview.
?	How to increase efficiency and service levels of hinterland transport of containers to low density areas?
	Develop a shuttle service from extended gate to Rotterdam and offer support with bargecloud tool and empty container exchange between partners by barge
	Reduction of truck kilometres (415.000 per year) and 550.000 kg CO_2



Platforms Portbase

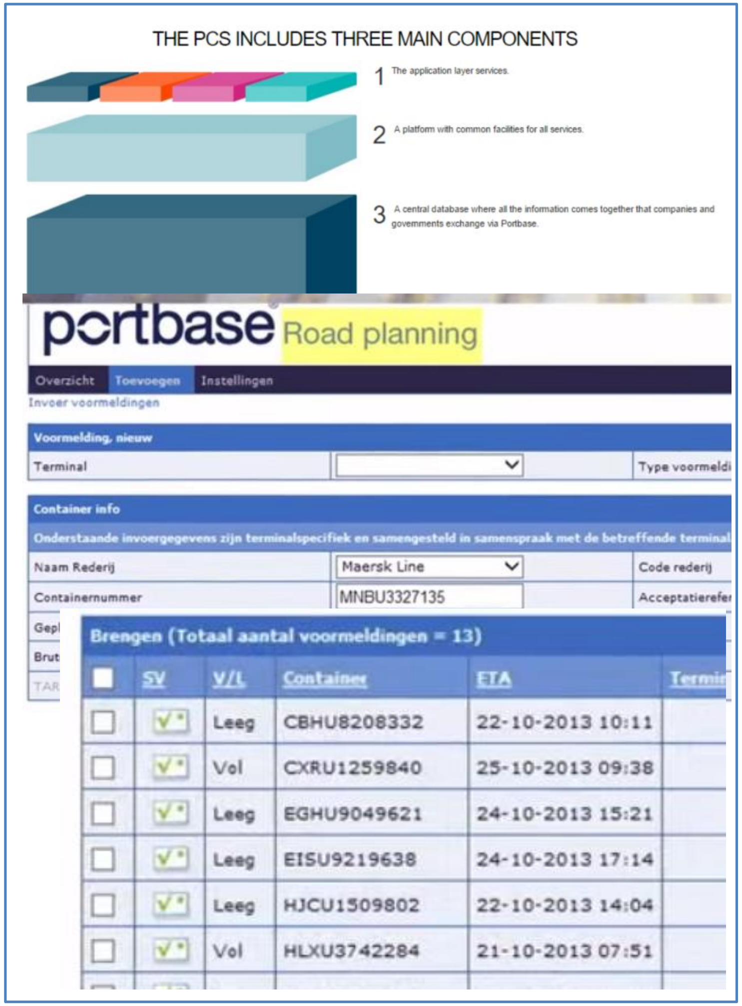
Portbase Port Community System (PCS) is the digital connection to smart Dutch ports.

Via the Port Community System, Portbase currently offers over 40 different services to approximately 3,200 customers in all sectors of the Dutch ports.

How to organize information exchange in ports?

Development of application layer services, provide a platform with common facilities for all services and a central database where all the information comes together that companies and governments exchange.

Offering of more than 40 different information services through a single hub leading to greater efficiency, lower costs, better service provision, more transparent planning, throughput times and fewer mistakes;



Control towers
Wayz synchromodal control tower

Optimizing synchromodal

Wayz researches/surveys logistics flows, advises optimization of logistic processes, and supports shippers and logistic service providers to implement innovative and sustainable projects.

How to manage strong growth in container transport from deepsea port to cooled warehouses in the region?

The Wayz Control Tower carries out total chain management for its clients to increase the number of synchromodal transported refrigerated containers between the Maasvlakte and Barendrecht/the Westland.

Peak shaving, simpler use of inland shipping, improved response to future demands of terminals and 18 tons reduction of CO2 emissions in 2014

Control towers
Seacon and CAPE

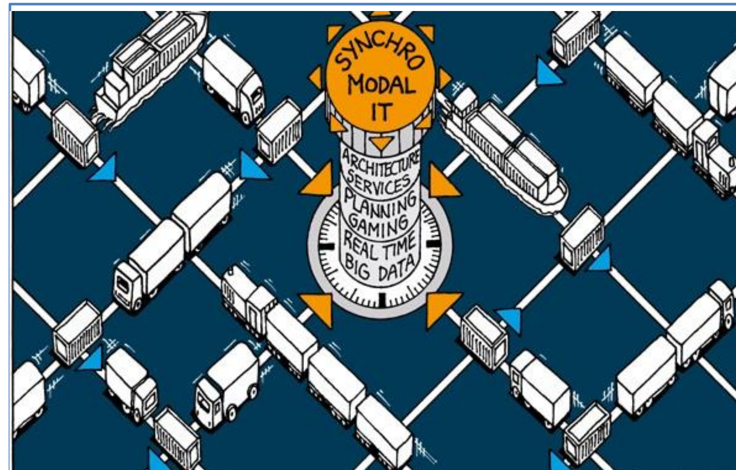
Successful support of synchromodal planning with the Synchromodal Control Tower

CAPE Groep supports the optimization of logistic operations and management and collaboration in logistic chains.
Seacon Logistics is the number one logistics chain director and leading in applying the multimodal transport concept.

How to support synchromodal planning and solutions in a control tower?

Construction and execution of a control tower for Seacon Logistics to support synchromodal services. Combination of maritime and continental freight flows from and to Spain, Germany, Poland, Italy.

Modal shift of 10.000 TEU per year resulting in a reduction of CO_2 emissions of 1900 tons



Control towers
Greenway Logistics / Ewals

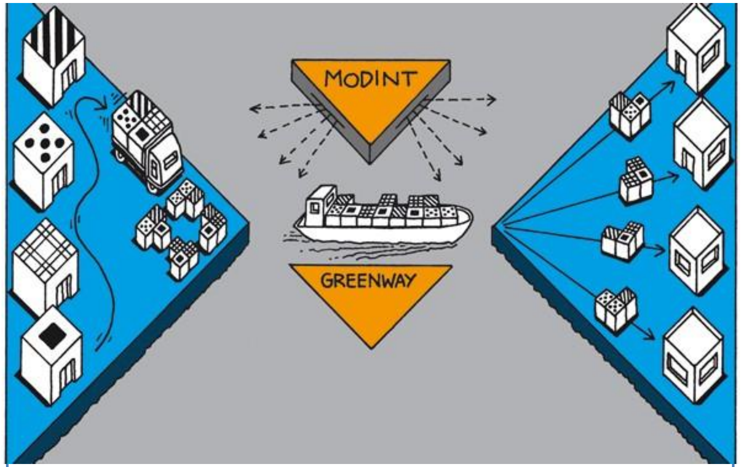
Bundling at source location

Ewals operates as a Lead Logistics Provider (LLP) and manages total logistics flow
Greenway is active in mediation, buying and selling of logistic services, developing logistic concepts, IT, advice and consultancy.

How to increase the efficiency of shipments from a myriad of Chinese suppliers to individual stores in the Netherlands

Design and realisation of a central organisation for "Bundling at source location", design and realisation of a working IT SAAS platform and execution for inbound transports from the Shengzhen region in China.

Reduction of handling costs of 30-40%
Reduction of distribution costs of 7%
Reduction in lead times



Supply chain collaboration

Providing supply chain solutions as a service in the cloud. Configure best-of-breed standard software to produce solutions that exactly match customers' needs.

No structured and mutually agreed process flow for all (future) supply chain partners. No open standards based integration for both process and data.

Advanced, ready-to-use functionality on the adaptable Tradeshift collaboration platform that enables companies to connect, manage and control crucial (future) supply chain processes and business transactions.

PM

With up to date data optimal use of waterdepth in rivers

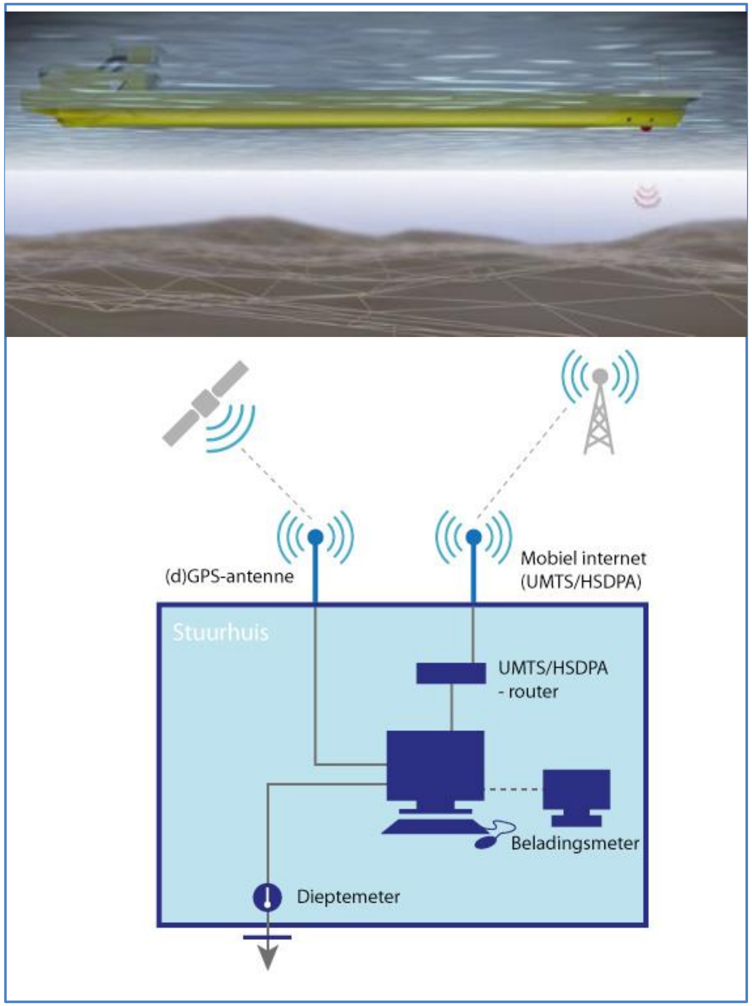
COVADEM

Technology provider for cooperative navigable depth measurements in inland waterways

How to predict the current water depths of the route to be navigated and support inland vessels to make maximum use of the navigable area provided by the waterway.

Vessels are provided with a system to read the waterdepth data from existing sensors and send this to shore. The keel clearance is converted into the current water depth of the route being navigated. These current navigable depth measurements are made available to shipmasters

5-10% better use of load capacity of the vessels navigating on rivers



IT solutions
Venturn

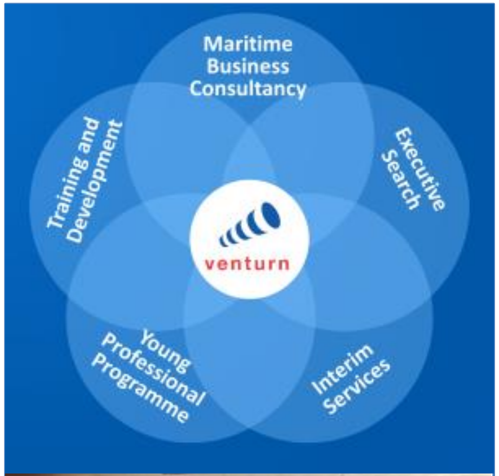
Venturn Container Terminal excellence; strategic planning terminals

Maritime consultancy, training & development, executive search and interim Services to the maritime and the interrelated logistics sector.

How to develop a strategic plan for future development of container terminals

Serious gaming sessions which focuses on operational excellence, strategic thinking commercial skills. Four teams take over full management of an existing container terminal. Teams rise to the challenge to transform their terminal into a true and sustainable success.

PM.



Transport execution
EGS, European Gateway Services

PM

EGS offers high frequent rail and barge connections between Rotterdam and an integrated and rapidly expanding network of inland terminals in the European hinterland.

How to synchronize multimodal transport from deepsea port to the hinterland?

The starting point for EGS is always the synchromodal organisation of hinterland transport. For each trip, the modal choice (rail, barge, feeder, truck) is based upon the most efficient and sustainable solution.

Shorter lead times, reliable transport, carbon reduction

Transport execution
Synchromodal Service Rotterdam-Tilburg

Succesfull implementation of synchromodal service in hinterland transport

MCT: inland terminal located midway between Rotterdam and Antwerp

Railport Brabant/BTB: trimodal terminal located in logistic hotspot Tilburg

How to optimize transport from deepsea port to the hinterland?

Mode free booking of container transport from seaport to warehouses in Tilburg trough a synchromodal cooperation with terminal operators, transport services and shippers

Number of truck trips with containers is reduced with 50% resulting in an improvement of the carbon footprint with 250 tons per year