# Port of Hamburg: smartPORT solutions for the 21st century

# The strategy for intelligent port development

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## The Port of Hamburg is the most eastern port of the North

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## Port of Hamburg:
## due to its inland location the on-transport is not only faster, it is also less costly.


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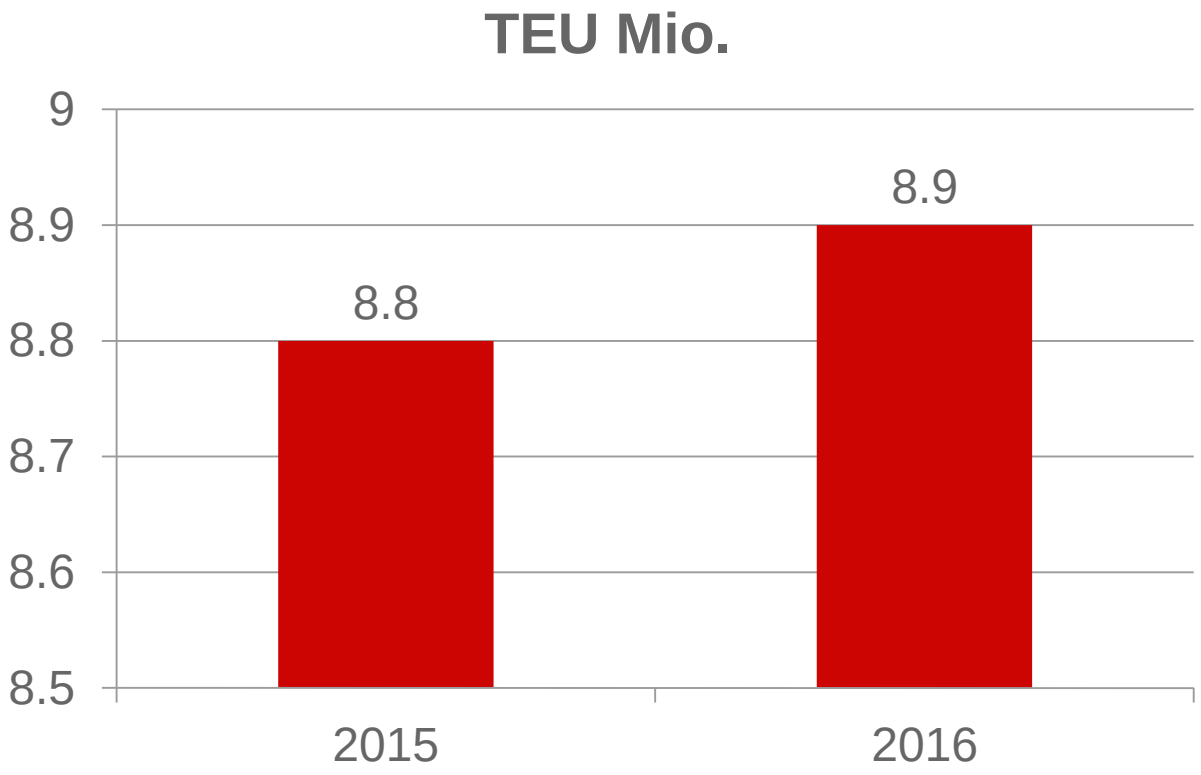
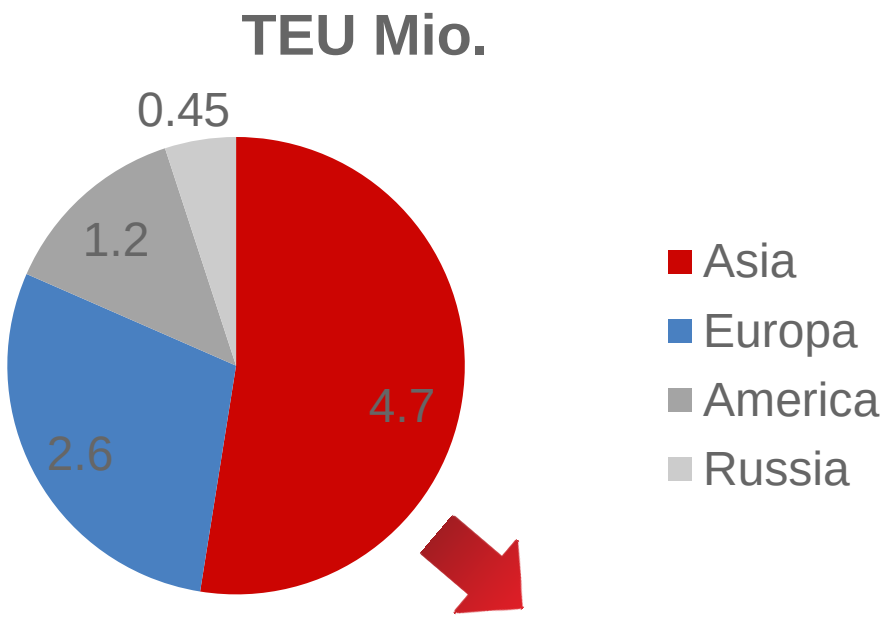
# Development of container handling in the Port of Hamburg




**Container handling 2016:**




**2.6 Mio. TEU with China**

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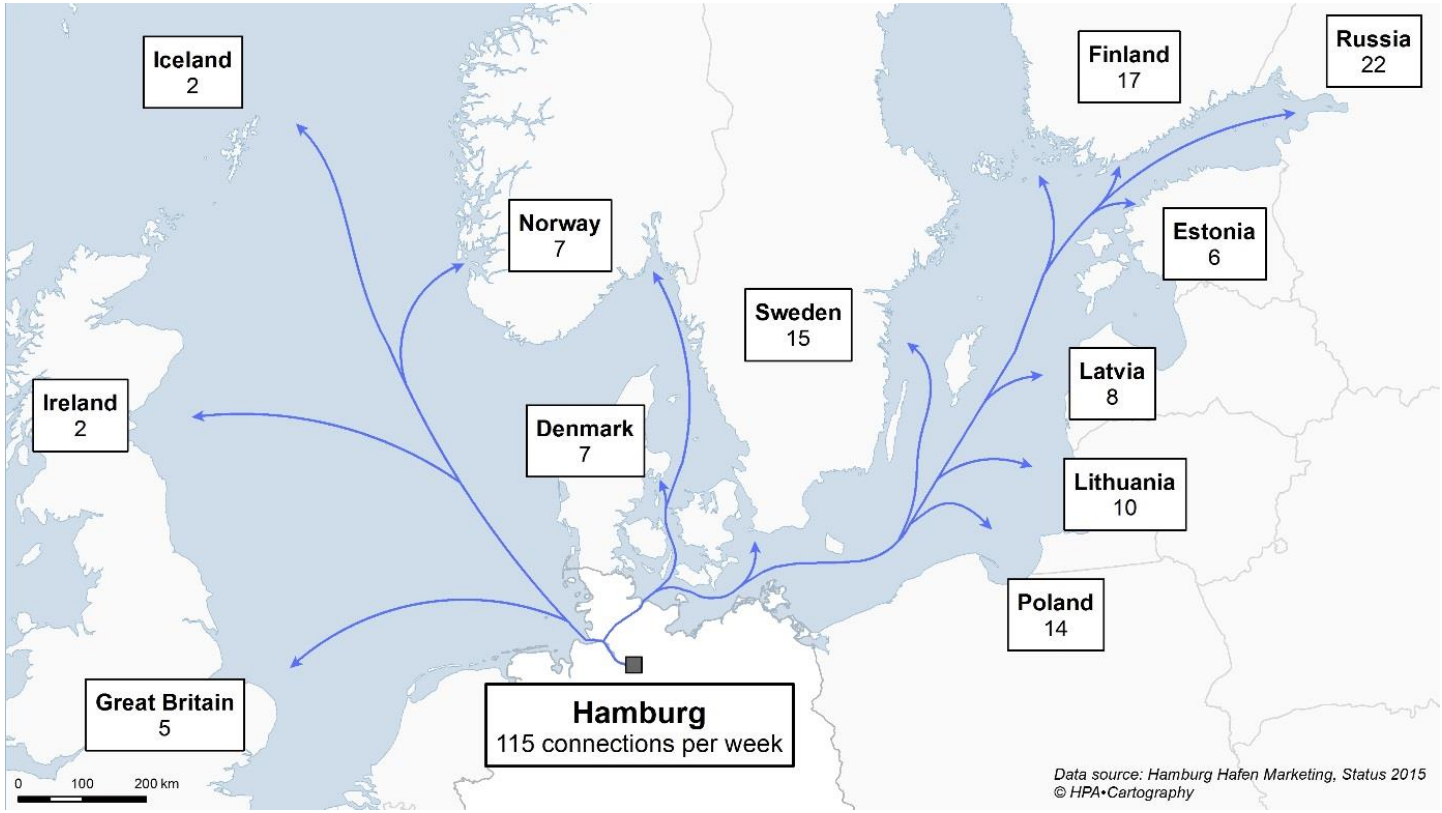
# The Port of Hamburg has a large number of feeder connections to the Baltic Sea...



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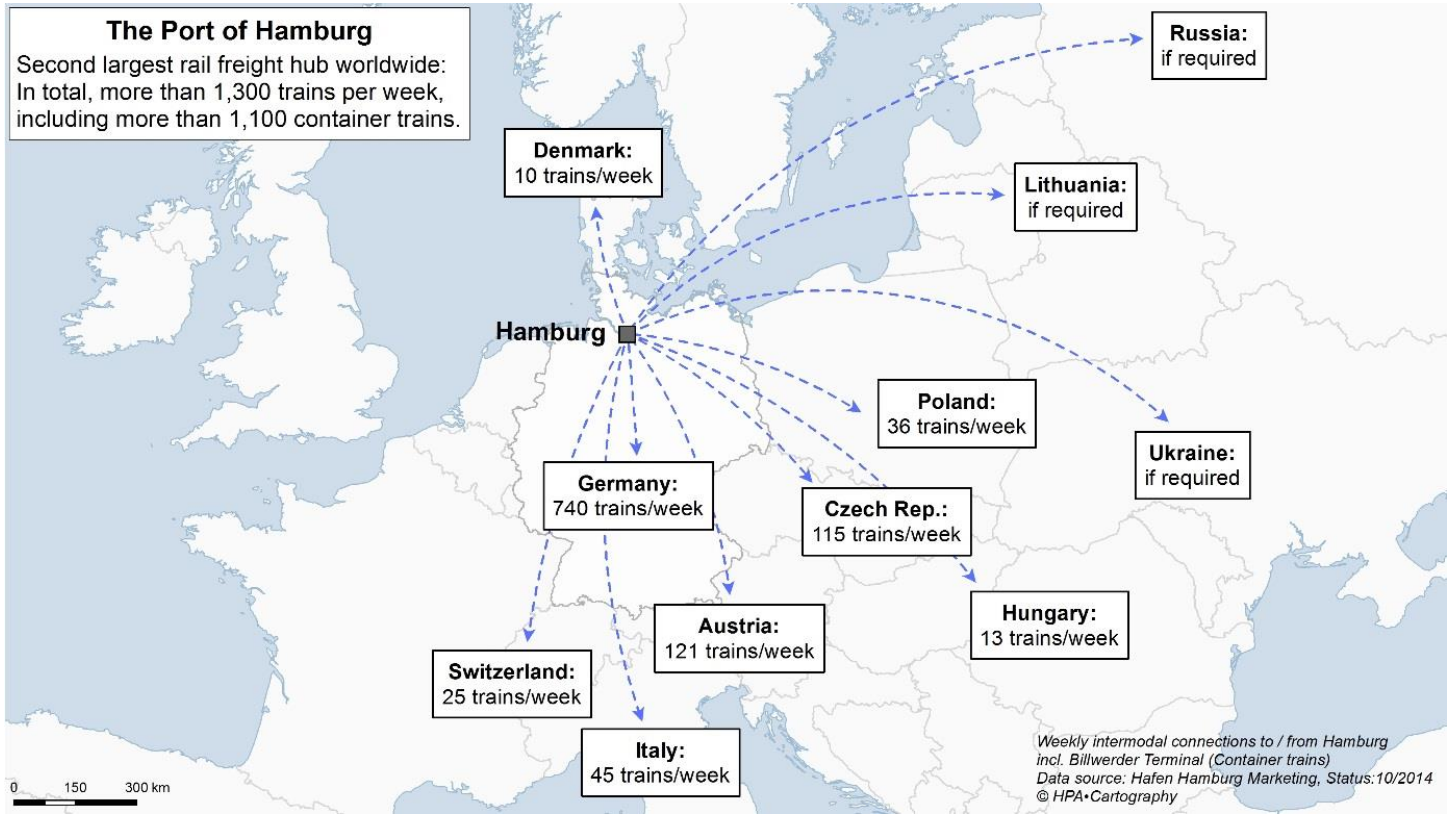
## and a large number of rail connections to its hinterland.



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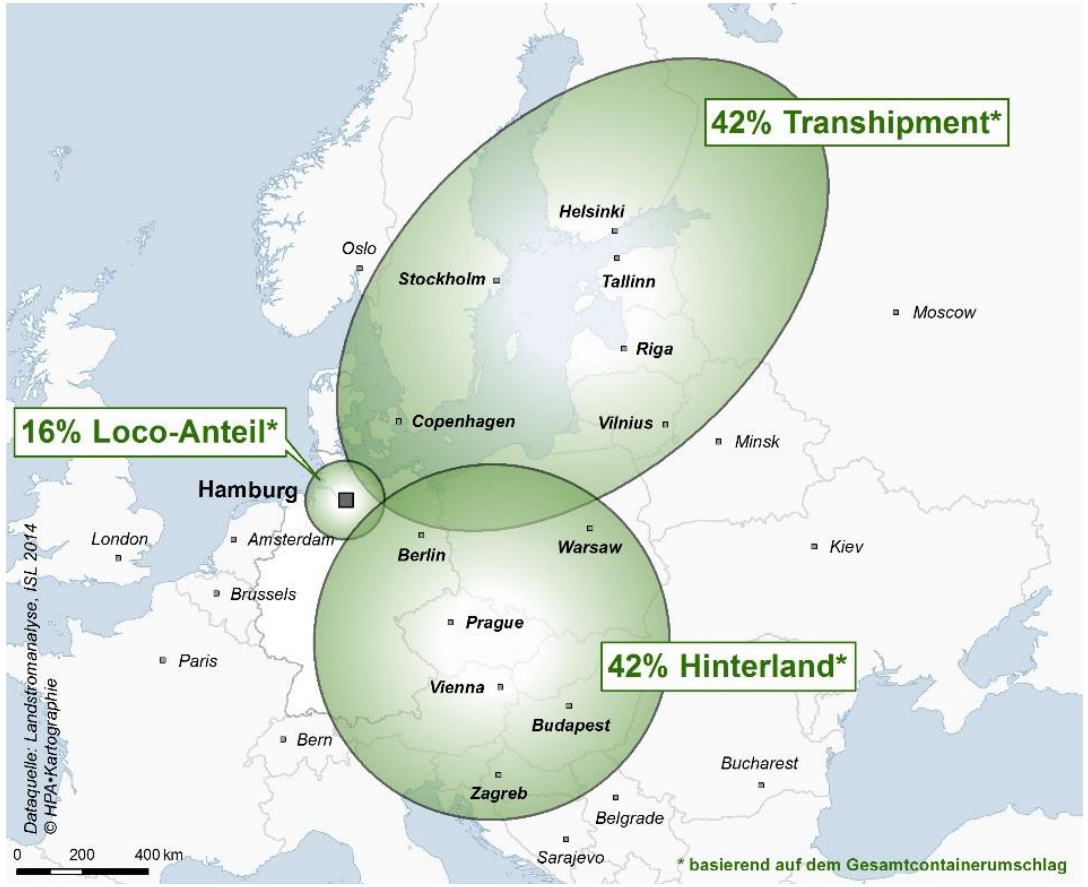
# Site advantages of the Port of Hamburg




## Advantages of the Port of Hamburg

- Maritime link between the emerging overseas markets and the Baltic region
- Favourable position to developing markets in Central and Eastern Europe
- Excellent maritime transport to the hinterland, short road travel, reduction of transport costs and carbon footprint
- Metropolitan region as a local market, wide range of maritime services, modern infrastructure and efficient transport connections by sea, road and rail

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## smartPORT energy

Lower energy use and environmental impact

## smartPORT

Efficient use of energy and infrastructures

## smartPORT logistics

Optimized supply chain and transportation networks

# Driving forces behind current developments in the port

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## High cargo volumes in limited areas

2000: 85 million tons

2015: 138 million tons

## Larger vessels & cargo loads

2000: 126 ships

2015: 617 ships

## Increasing traffic


## Limited parking areas

## Increased environ-mental awareness

# Context of smartPORT management projects

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## Road traffic

Port road management,
drivers, road maintenance

## Ocean transport

Shipping lines, pilots,
ship traffic control, bridges

## Rail traffic

Railway companies

## Environment

Disaster control,
city-port and citizens

## Terminals

Port operators

## Pubic authorities

Construction, civil
engineering

# smartPORT energy

# smartPORT energy – new directions in production and use

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## Development of innovative technology

reducing dependency on conventional energy sources

## Improved energy efficiency

reducing emissions

## Innovative transportation planning

reducing energy use and costs

# smartPORT energy – for example: power supply

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onshore power supply facility in the Hamburg Cruise Center Altona

floating liquid gas power plant LNG Hybrid Barge “Hummel”

Landside power supply for cruise ships reduces emission compared to ships’ generators – reduction of air pollution, $CO_2$ and noise emission

# smartPORT energy – for example: energy production

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Wind turbines
in the port area

Solar energy plants
in the port area

Alternative power production instead of conventional power plants reduces air pollution and $CO_2$

# smartPORT logistics

# smartPORT logistics – efficient transportation

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Optimized transportation management & use of traffic networks

$CO_2$

Long-term reduction of emissions and air pollution

more efficient use of existing infrastructures

development of new intelligent infrastructures

optimization of the flow of traffic and goods traffic

digital networks link all processes and participants

# smartPORT logistics – Flow of traffic and goods

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## Future Port Traffic Center

## Existing IT Platforms

Optimizing the flow of traffic and goods –
Customers (forwarders, logistics providers, and freight agents)
can choose the most efficient transport mode (added value)

# smartPORT logistics – for example: shipping

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## Port Monitor

Control station software for the port vessel traffic center

Collection, processing, and presentation of information from various data collection and communication systems in the port

Comprehensive and up-to-date overview of vessel traffic in the port

# smartPORT logistics – for example: railways

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## transPORT rail

Information system to link all data on railcars and cargo for rail transport companies,  Hamburg Port Authority, and terminals

Optimal train scheduling

Increased efficiency in rail transport

# smartPORT logistics – for example: railways

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## smartSWITCH

Real-time information system to monitor the condition of rails and switches via sensors

more effective use of the rail infrastructure

early warning on traffic conditions and malfunctions

better planning of maintenance

# smartPORT logistics – for example: road traffic

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## Port Road Management

Traffic control system based on detectors and sensors in the port road network

optimizes the flow of traffic through intelligent traffic management LED message boards

dynamic traffic control in case of congestion and to improve use of parking spaces

reduces fuel consumption and emissions

# smartPORT logistics – for example: road traffic

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## smartPORT Logistics (SPL) App

### Online traffic management application for truck traffic in the port

traffic information
routing
expected time of arrival
information on parking spaces
information on construction sites
closure times for moveable bridges
interfaces for further applications

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## Looking forward to your questions.


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