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Tågoperatörerna

The Swedish railway freight sector and opportunities for cooperation between Latvian and Swedish transit and logistics industry.

Björn Westerberg, CEO, ASTOC
September 11th, 2018

Agenda

- ASTOC
- Rail Traffic in Sweden
- Swedish Railway sector and liberalization
- Railway 2050 – Freight Strategy
- Potential for Latvia

42 members

Quality - Capacity – Competitiveness

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Arlanda Express

#Inlandsbanan

CFL cargo Sverige AB

VÄTE CONSULTING TEKNIK TRAFIK

Nordiska Tåg AB

Associerade medlemmar

ALSTOM

BOMBARDIER

ARRIVA

Stockholms Spårvägar Vision och Tradition

DB SCHENKER

railcare

Ansaldo STS Sweden AB

BLÅ TÅGET SKANDINAVISKA JERNBANOR

Stockholmståg

DVVI

STAB

Grenland Rail

BotniaTåg AB

DSB

Keolis

tågkompaniet

green cargo

TMRail AB

Jernhusen

SJ

Tågåkeriet i Bergslagen AB

HECTORRAIL

TÅGFRAKT

TCC Transport Competence Center

trainpool

LKAB

CargoNet

Nobina

transdev VÅR RESA – INSPIRERAD AV DIG

MTR

SANDAHLS BOLAGEN REAL RAIL AB

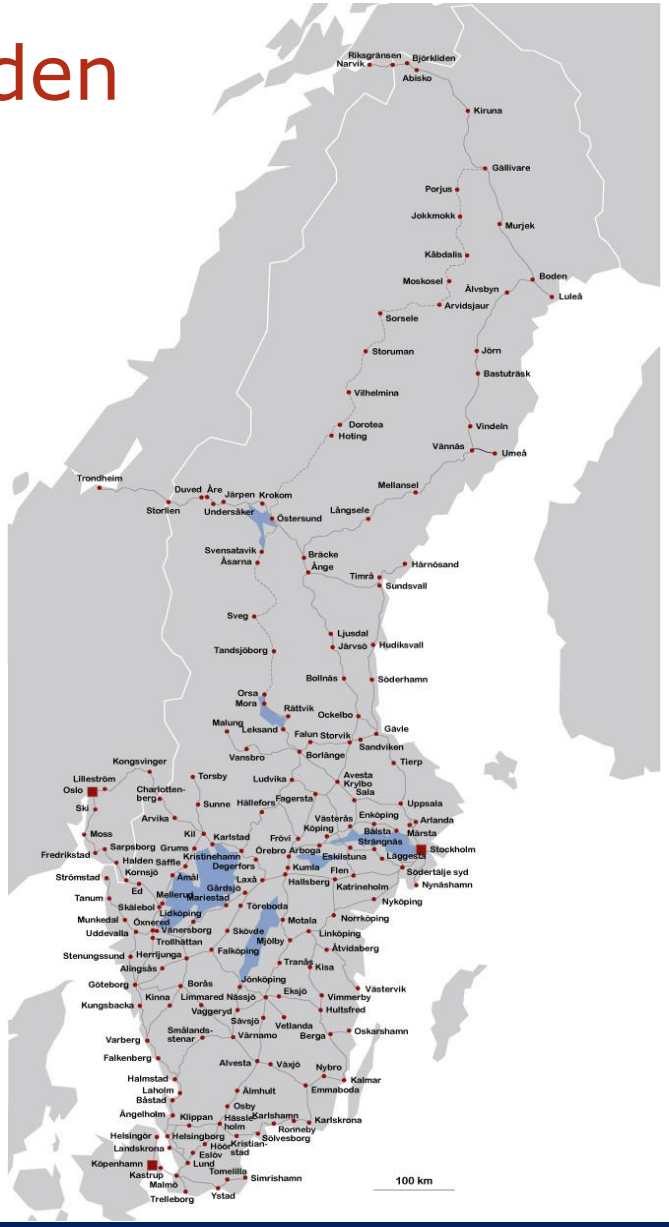
baneservice

CAPTRAIN

ProTrain BEMANNING AB

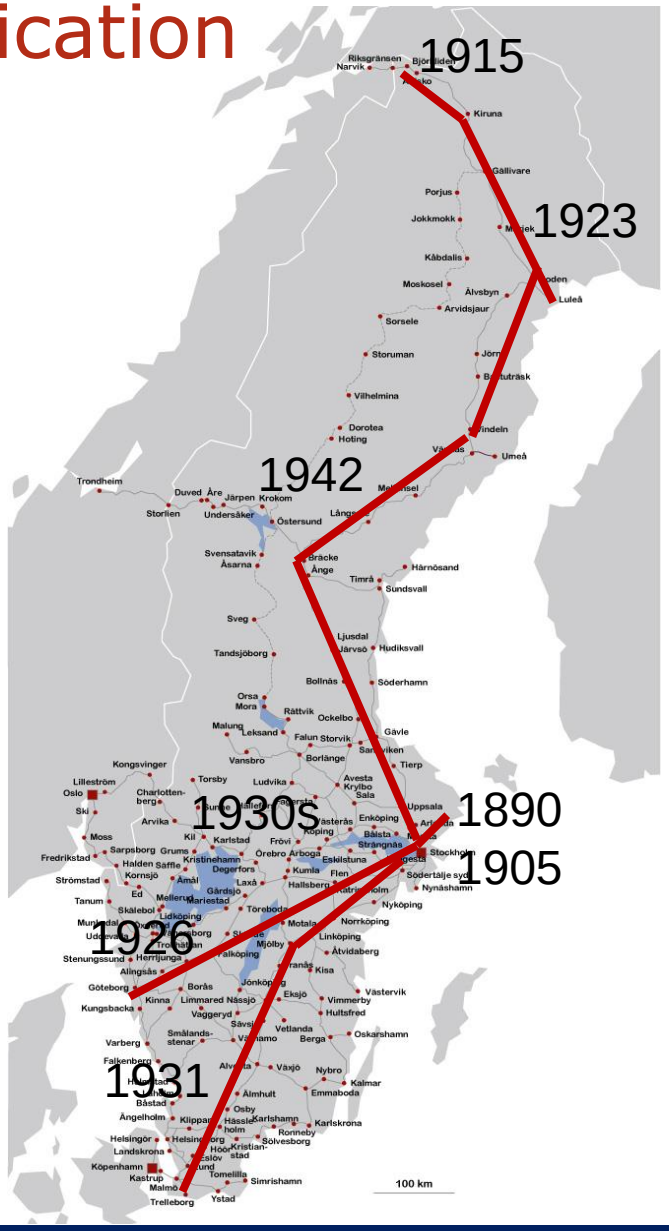
Rail traffic in Sweden

- Sweden has more than 12,000 km of railway track
  - 2,000 km double tracks
  - 10,000 km single tracks
- 85% electrified
- Generally multi-purpose use:
  - long-distance passenger services
  - regional passenger services
  - freight services

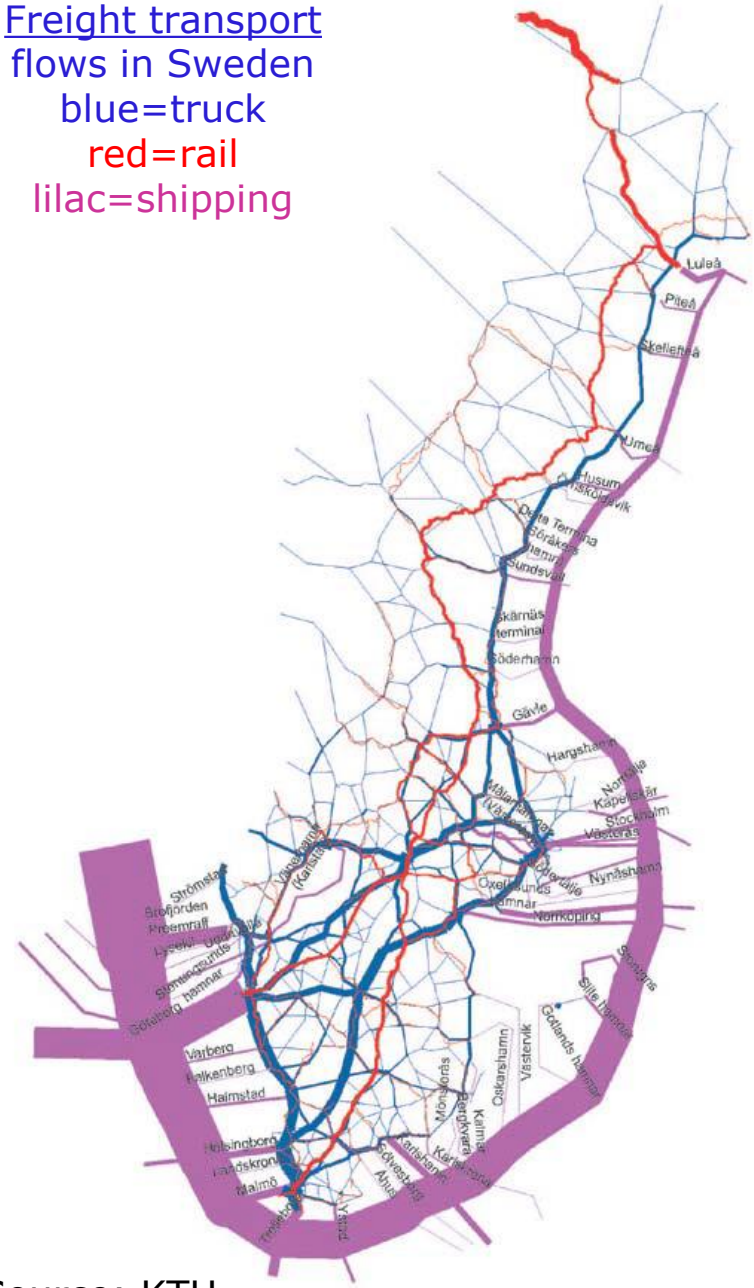


Early Railway Electrification in Sweden

- 1890 Djursholmsbanan/Roslagsbanan
- 1905-14 Local lines, tests, Stockholm, City trams
- 1915 Malmbanan
  - Cost focus vs coal, cheap electricity, 239 waterfalls
  - 1/3 of normal frequency, 16 2/3 Hz
- 1920s-1930s
  - Luleå-Riksgränsen
  - Stockholm-Gothenburg, 458 km
  - Stockholm – Malmö, 863 km
- 1942 Trelleborg – Riksgränsen, 2022 km
- 1950s Massive investment in electrification
- 1960s World's most comprehensive electrified railway, strong industrial development
- 1970s Diminishing investments in electricification
- 1980s- Maintenace

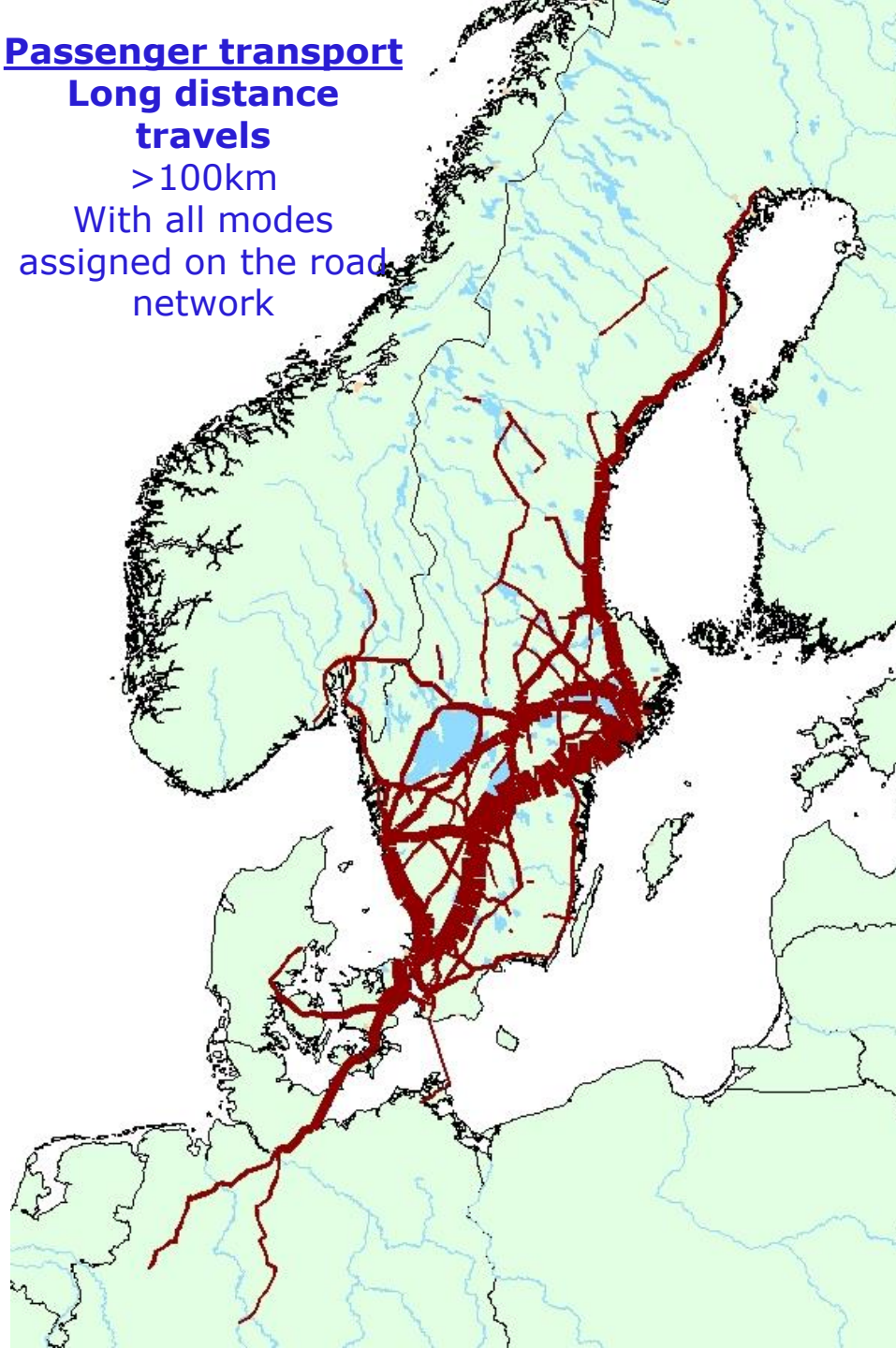


Freight transport
flows in Sweden
blue=truck
red=rail
lilac=shipping



Source: KTH

Passenger transport
Long distance travels
>100km
With all modes assigned on the road network



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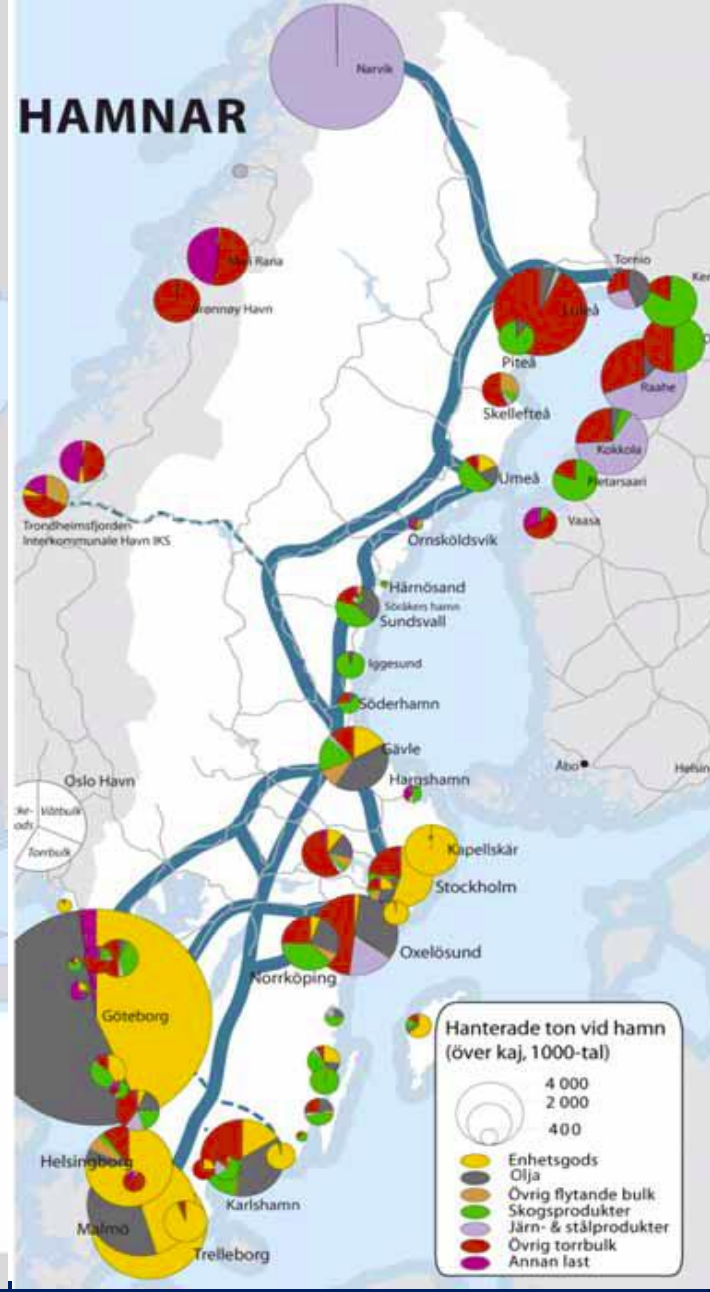
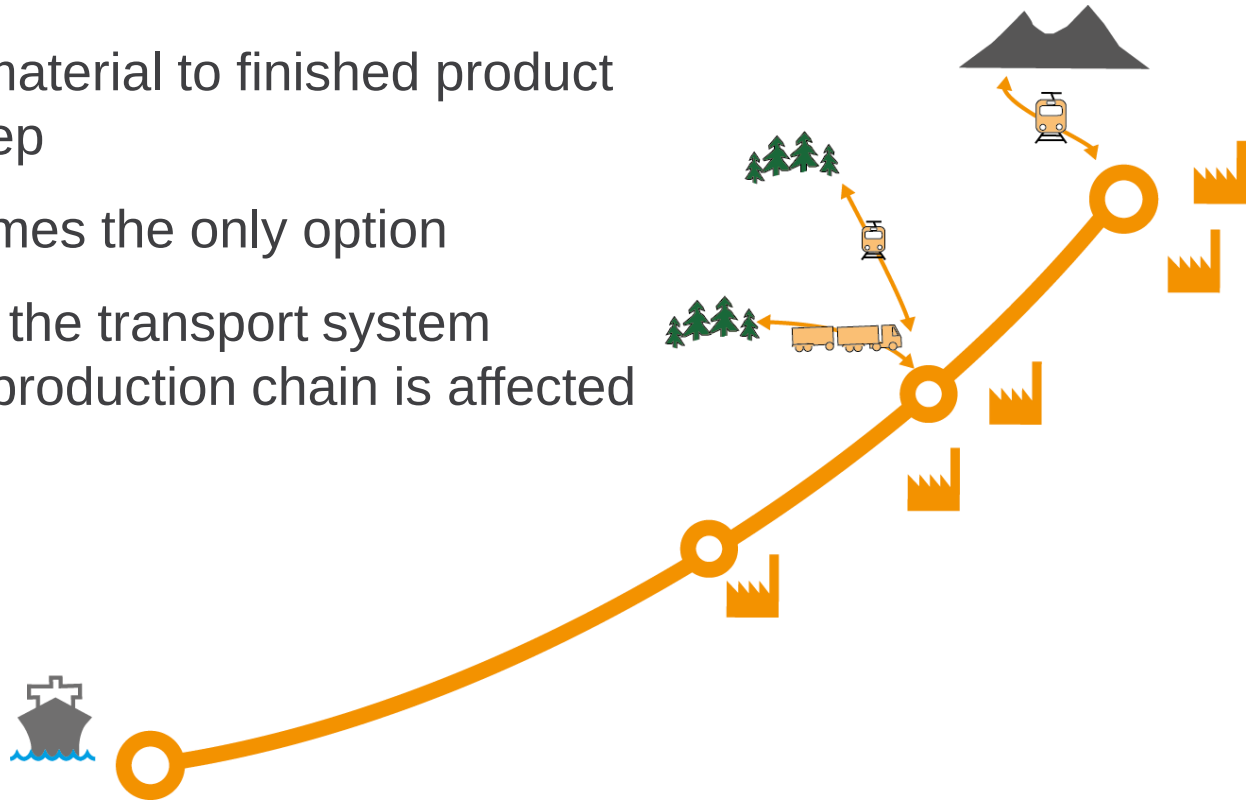
Freight on rail and sea



The Railways “Heavy” Freight Transports

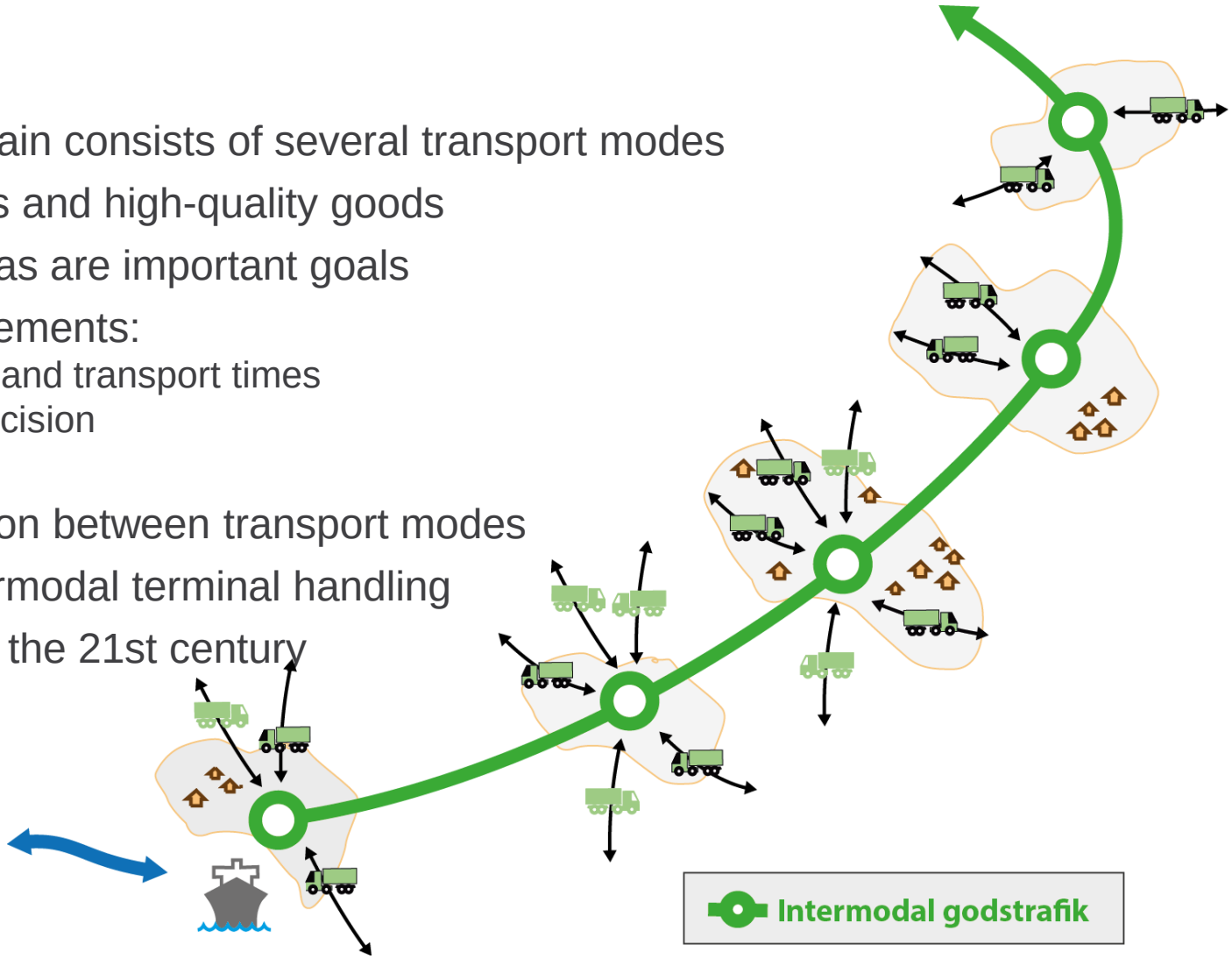
- The railroad is an integral part of the industry production chain
- Processing from raw material to finished product takes place step by step
- The railway is many times the only option
- Lack of redundancy in the transport system means that the entire production chain is affected



Intermodal “light” freight transport

Characterized by:

- The transport chain consists of several transport modes
- Consumer goods and high-quality goods
- Metropolitan areas are important goals
- Customer requirements:
  - Short lead times and transport times
  - High delivery precision
  - Flexibility
- Strong competition between transport modes
- High cost of intermodal terminal handling
- Strong growth in the 21st century



Strong growth of railway services in Sweden

- Since the early 2000's both passenger and freight services have experienced a strong growth
- Important factors behind this development:
  - Structural reforms and market opening
  - Infrastructure investments
  - Low infrastructure charges
  - Regional development

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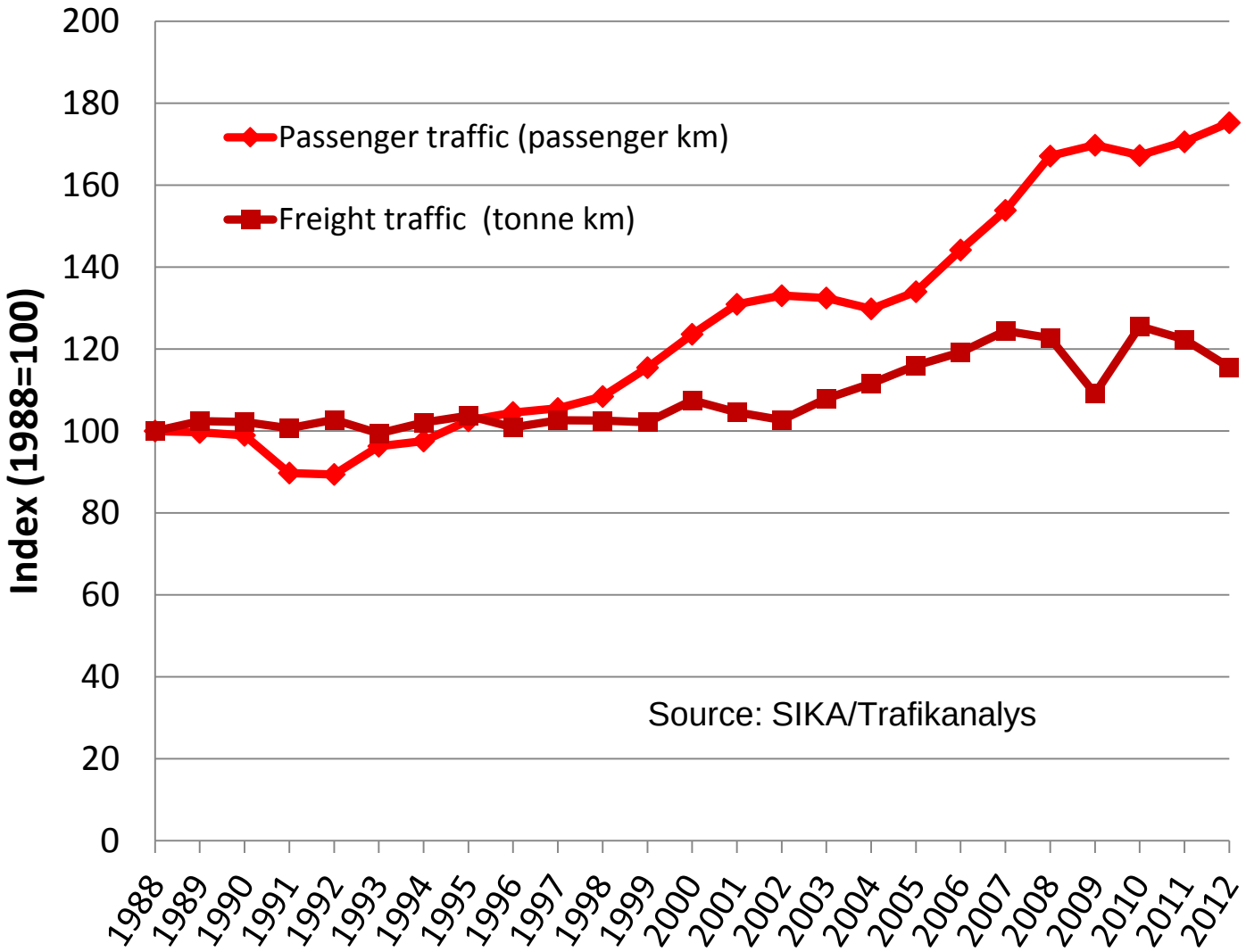
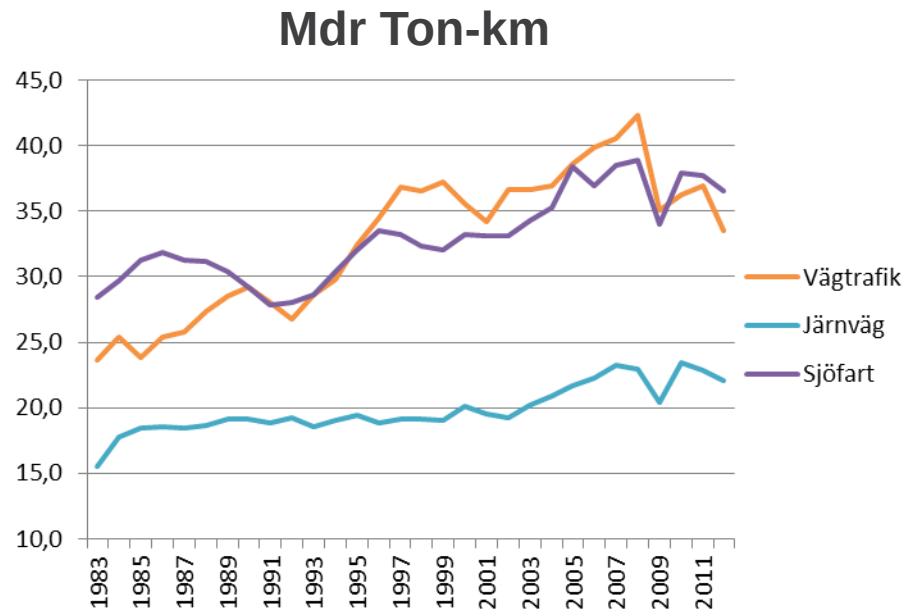
Market development

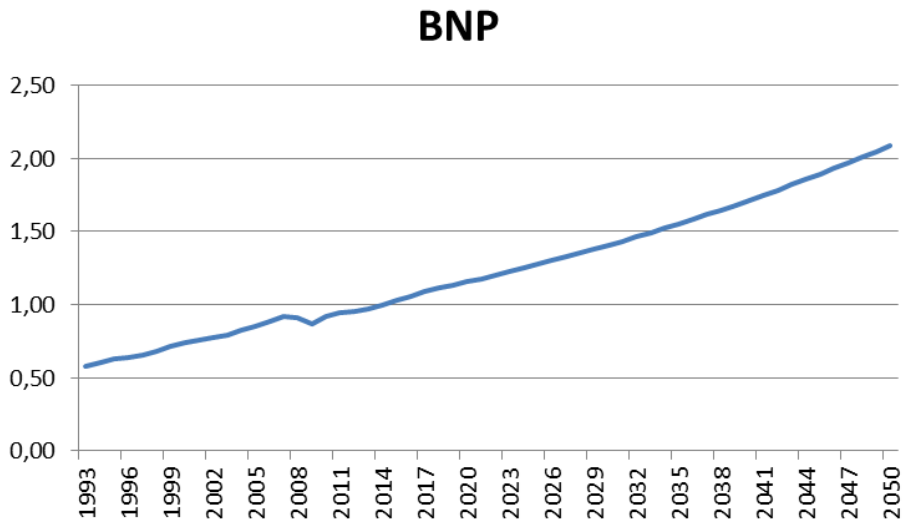


Freight Transport Development

- Historically stable market shares between modes
- Transport work is increasing with economic growth
- +30% till 2030
- +60% till 2050



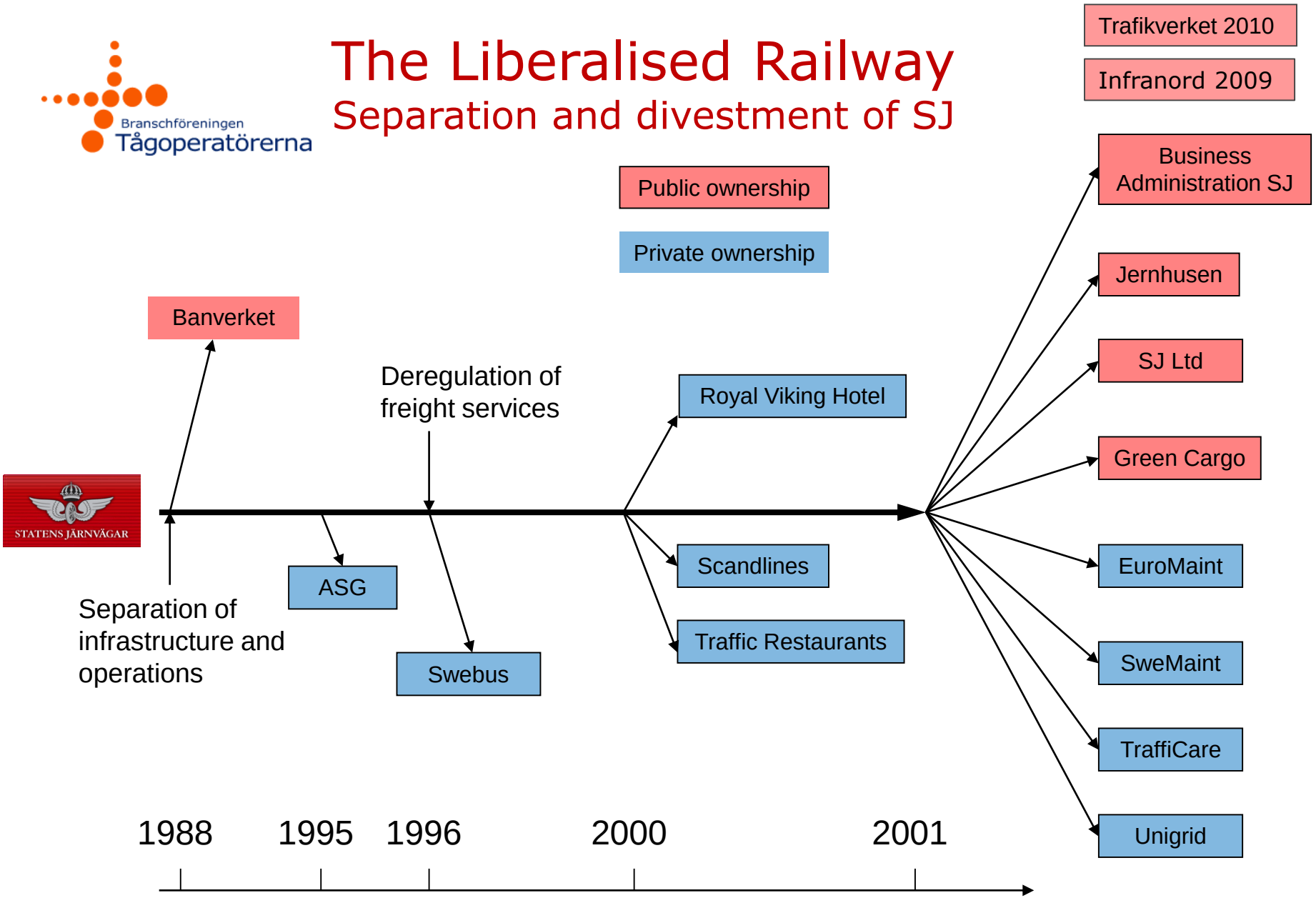
Source: Trafikanalys



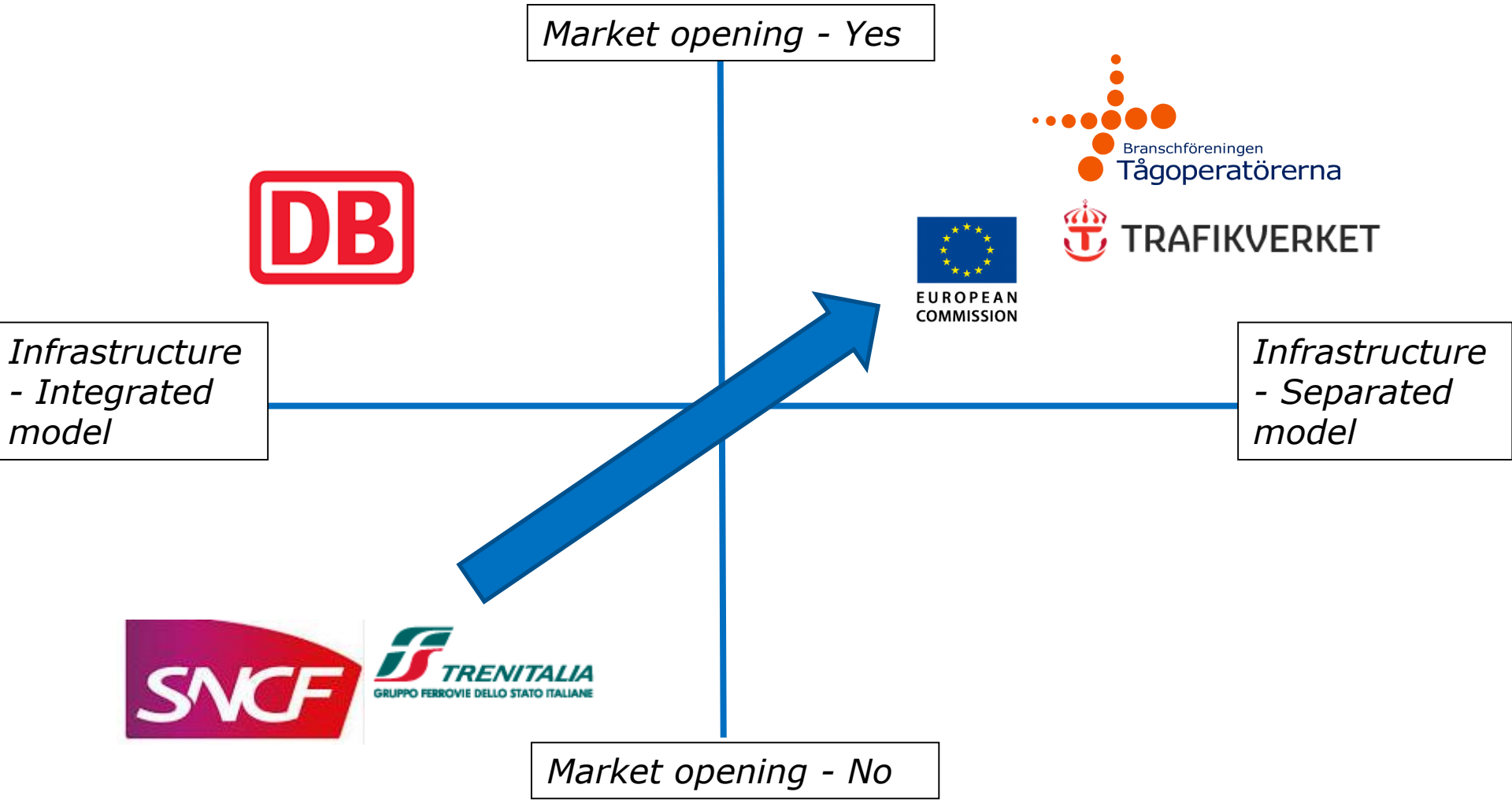
Source: KI

The Liberalised Railway

Separation and divestment of SJ



4RP Political Pillar:
Market opening and Governance



The CER Chairman - **5 priorities**:

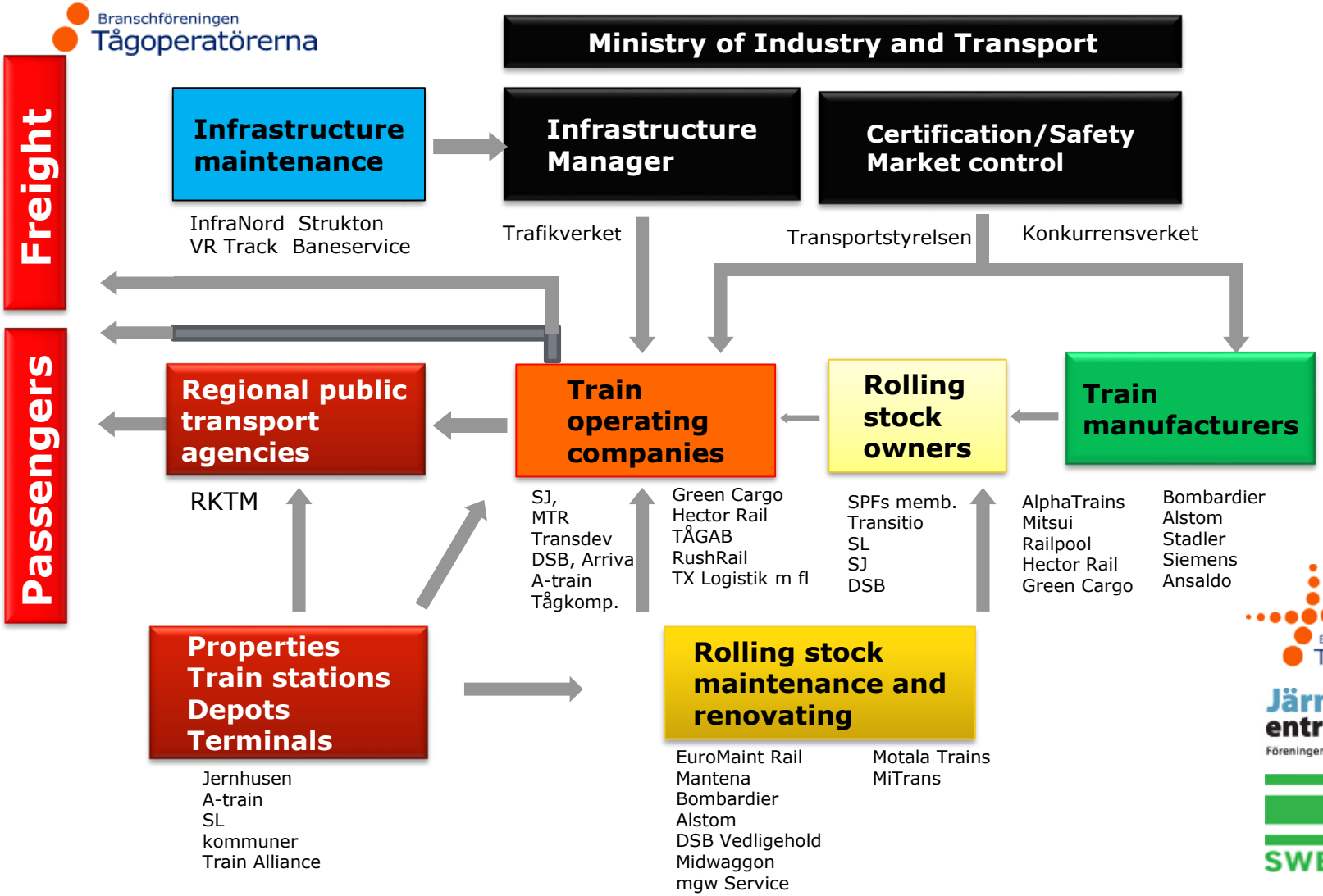
Chair priorities:

- Implementation of the 4th Railway Package's Technical Pillar and a strong cooperation with the Agency.
- Improving the conditions for ticketing and data exchange
- Innovation and Digitalisation
- Development of rail freight corridors
- **Improving conditions for intermodal competition**

Two additional issues:

- Security – As the threat of terrorism is real, the sector needs to develop a resilient and holistic approach for security. The overall goal is a high level of security while ensuring the open system of the railway sector and its competitiveness.
- Coordinating and unifying the sector – the sector is significantly fragmented and a better cooperation among the actors, such as UNIFE and EIM, is inevitable.

Swedish Railway Sector 2018



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Järnvägs entreprenörerna
Föreningen Sveriges Järnvägsentreprenörer

SWEDTRAIN

Current organisation of the Swedish railway sector – some characteristics

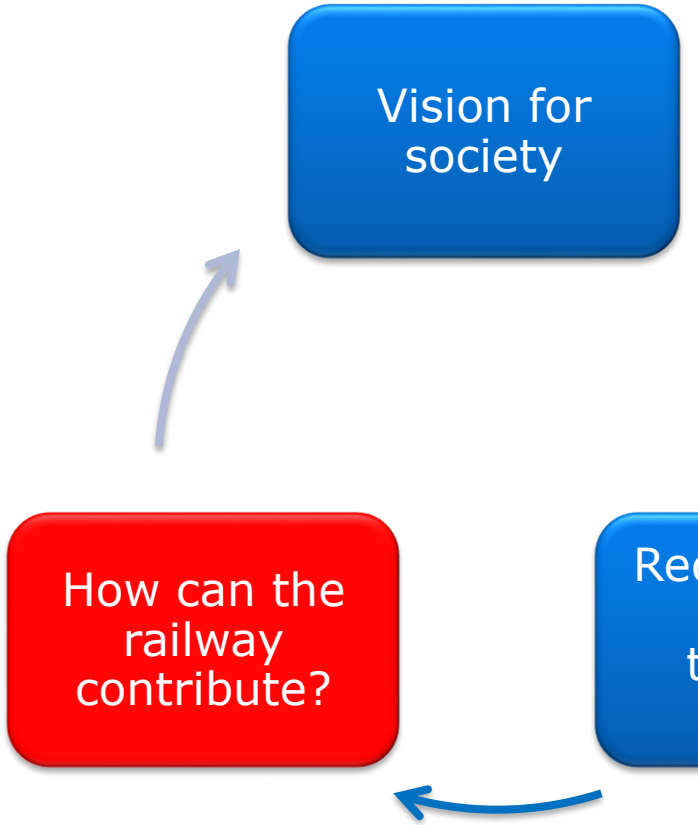
- Institutional vertical separation between infrastructure and train operations
- National multi-modal authority Trafikverket (Swedish Transport Administration) is the main infrastructure manager, with strong focus on procurement of maintenance from external contractors
- Train operating companies (or other organisers of train services) apply for access to the track infrastructure and pay charges
- Horizontal separation between passenger and freight operations
- Freight services and commercial passenger services are subject to open access competition. For these services, train operating companies have their own rolling stock
- The role of the public sector is still very strong - state controlling the main IM and RUs, county public transport agencies procuring train services

Challenges for rail freight

- Reduced volumes and margins, loss-making
- Infrastructure maintenance backlog
  - Reductions in speed on some sections of track
  - Closures of low density lines which are vital for the economy, industries and employment along the path
- Need for development such as longer & heavier trains
- Competition with truck traffic - Longer and heavier trucks and low-wage cabotage by road
- Cost increases: track access charges doubled in 5 years
- Funding of ERTMS onboard equipment
- Funding of wagon noise measures
- Regulatory developments (such as Access to Services)

Rail loses market share to road

A new vision is needed!



Prosperity 2050 – Create a competitive and a long-term sustainable country

"Future Proof Sweden"

Increased availability and world class logistics chains

The railways enable sustainable and competitive development

Railway 2050 – A vision of the role of the railways

- Think long-term already today
- Today's railroad and planned investments are not enough
- Railway 2050 enables sustainable and competitive development

Railway 2050 - Industry Freight Transports

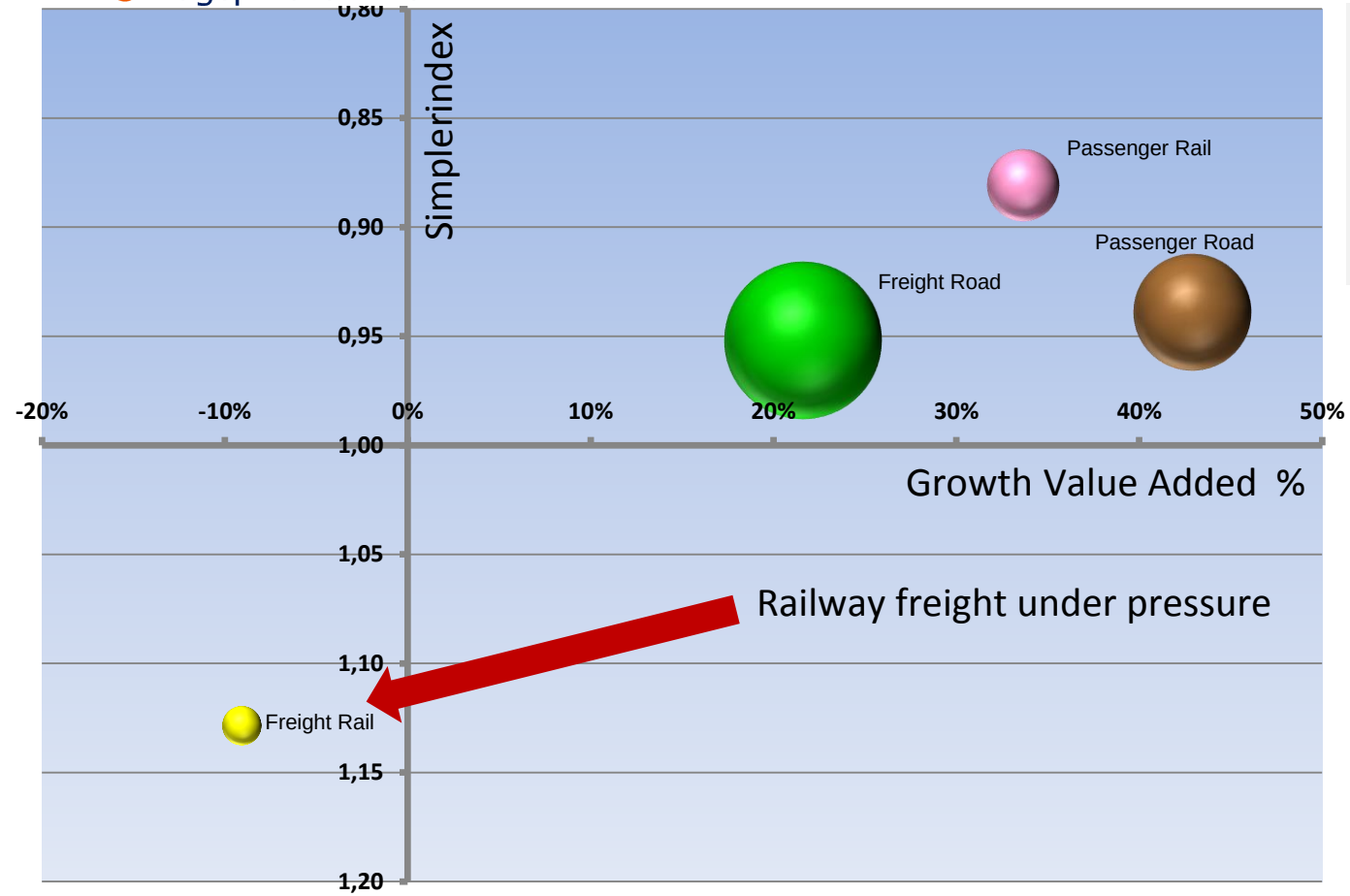
The liberalized railway freight market (1996 -2016)

- 13 RUs freight transport
- 40% of the market with new entrants
- No of employees – 32 %
- Turnover/employee + 47%
- Tonkm/employee + 44%
- Increased rolling stock utilization

But…

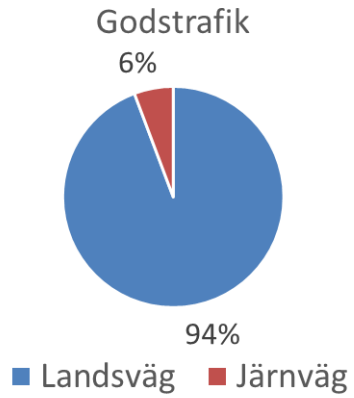
- Problems with quality and low profitability

Growth in value added 2010-2015 and profitability 2015



Comparison with freight and passenger traffic by road.

All segments except rail freight are profitable in 2015 and show growth in the period 2010-2015.



The railway freight market challenges up to year 2020

Step by step increasing growth and competitiveness:

- Increased reliability
- Increased utilization in the existing system
- Sustainable profitability for freight operators

Increased reliability → Increased utilization → Profitability → Growth and competitiveness

10 actions to meet today's challenges

A. Measures for increased reliability

- National maintenance strategy
- National plan for industry freight transports
- Review of railway yards

B. Measures for increased utilization

- Efficient capacity allocation
- International rail traffic
- Coordinated transports and horizontal cooperation
- Higher capacity trains (longer & heavier)
- More customized power supply
- Develop cargo terminals and industrial tracks

C. Measures for increased profitability

- Financial instruments i.e. climate compensation

Critical areas for development

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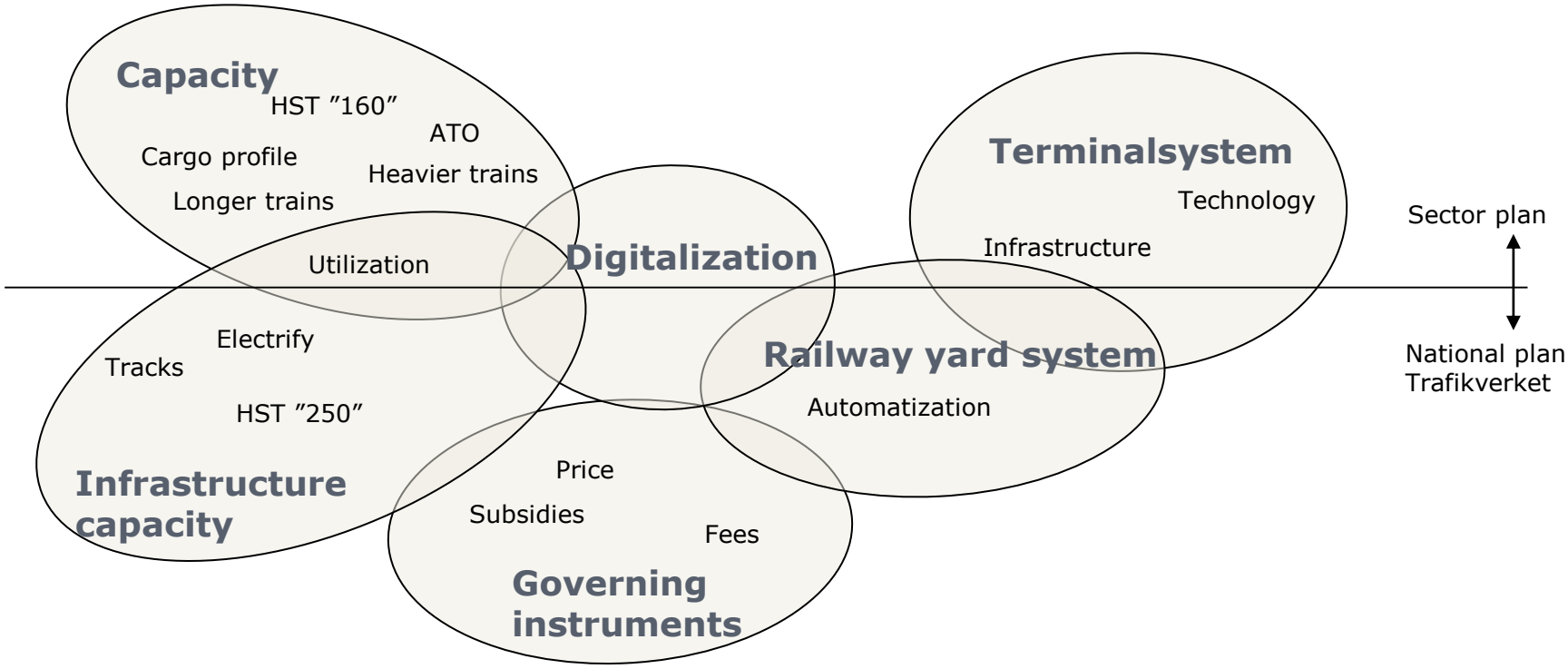
Attraction and competitiveness



Society och safety

Vision Railway 2050!

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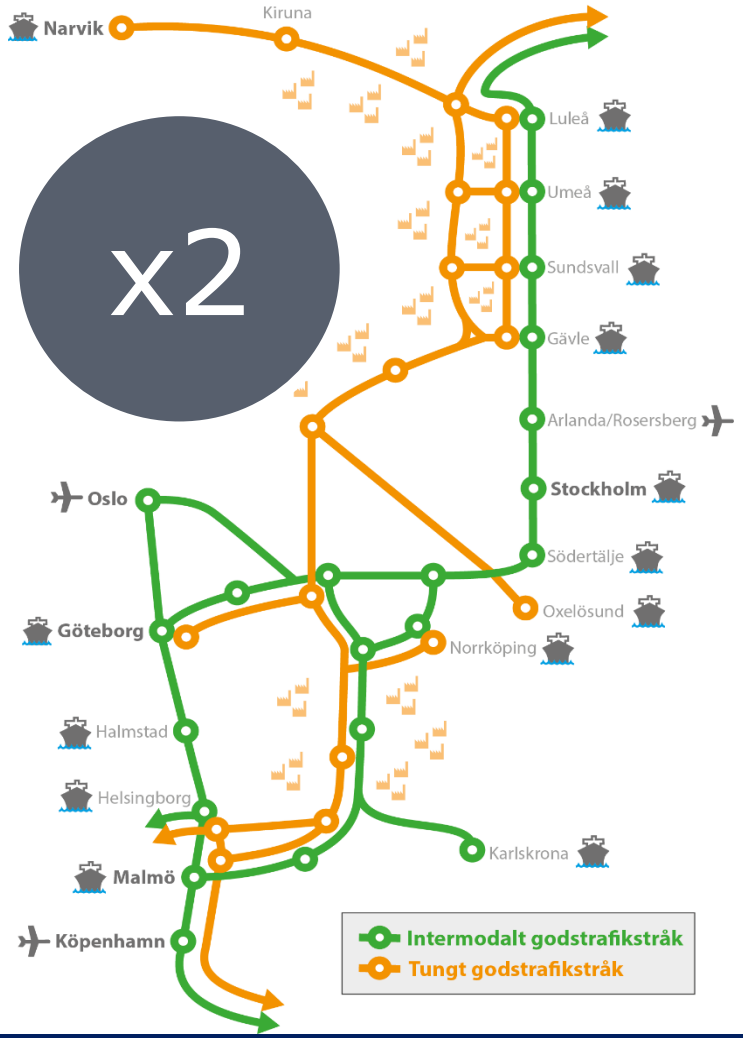
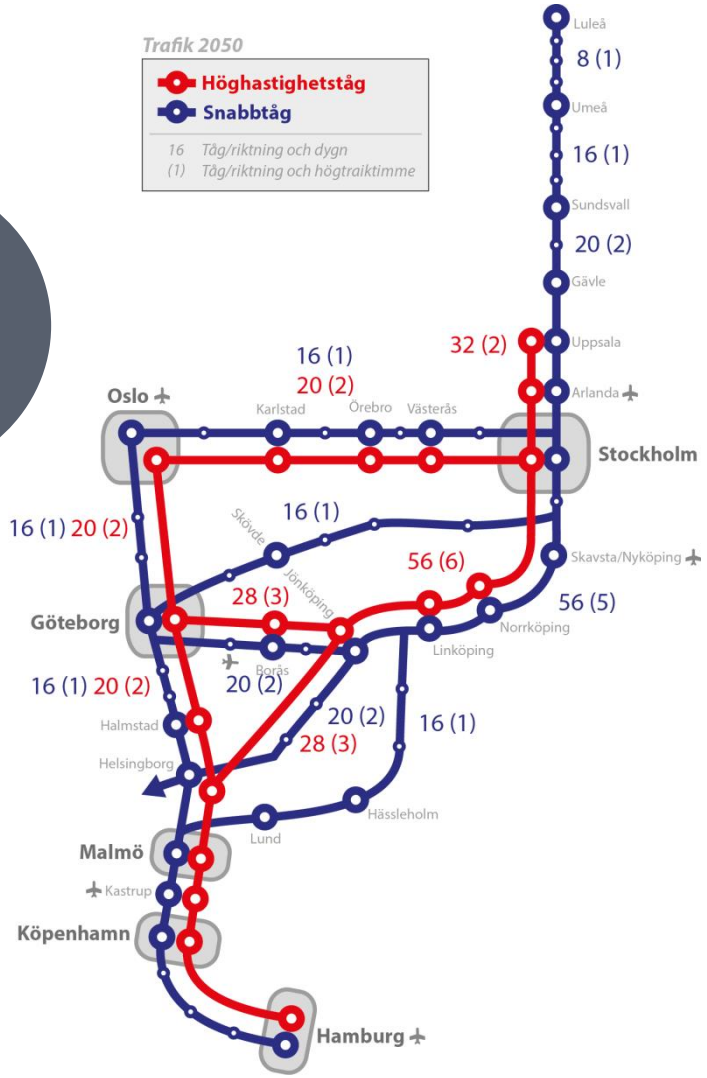
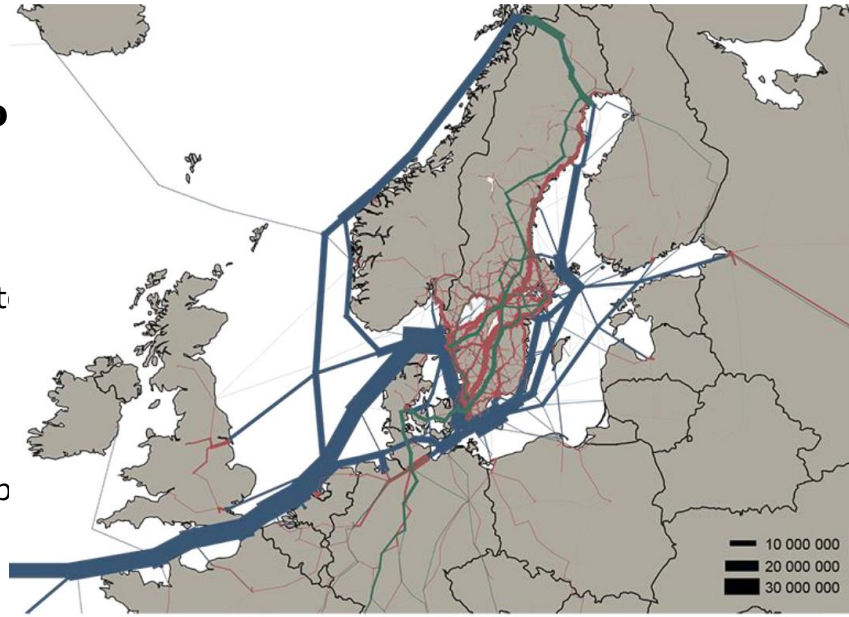




National Freight strategy, 2018

- **Strengthening competitiveness of Swedish industry**
  - Competitiveness, growth and employment
- **”National freight council”** established
- **Transport efficiency**
  - Longer and heavier vehicles
  - Open data for better utilisation
  - Focus on freight in National Plans
- **Research & Competence**
- **Intermodality and shift to railway & sea**
- **Nodes for transshipment, intermodality, locatio**
- **Assignments to Trafikverket for**
  - promotion of better conditions freight on railway and sea
  - promotion of intermodal railway transport
  - promotion of horisontal collaboration and open data filling rat
- **Automization of transshipment**
- **Incentives**
  - Polluter pays principle
  - Environmental compensation (Art 32 SERA) / Eco bonus (ship
  - Transshipment support compensation



Regeringskansliet

National Freight strategy, 2018

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International context

- *Sweden as a Permanent World Fair for climate technology and solutions*
- Fulfilment of TEN-T requirements
  - Longer, heavier trains – 750 meters and 1000 meters
  - Axle load 25 tonnes (32,5 tonnes)
- Develop ScanMed
- Prioritititise Nordic cooperation
  - The link Stockholm – Örebro/Hallbergs – Oslo (TEN-T proposal)
  - Haparanda / Narvik (TEN-T proposal)
  - Fixed connection Denmark in preparation for higher volumes (Fehmarn Belt)
- REFIT – simpler regulatory framework
  - Avoid cost drivers
  - More system solutions
- EU Mobility Package
  - Come to terms with cabotage issues
  - Road tolls

Potential for Latvia

- 4th Railway package increases railway competitiveness
- Rapid rise of containerization, intermodality, trailerization
- Rail Baltica, New Corridor
- Far East Cargo
- Attractive infrastructure, efficient freight and low terminal handling cost
- Technology, Hypermodality, ATO, Blockchain, Chinas new digital Silk Road
- New Swedish port

Rail vs Road, Rail vs Sea

4th Railway package potential

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The competitiveness of the rail sector will increase gradually. Railway potential increases with time and further away from major Baltic Sea ports.

- Current situation: Rail transportation is significantly slower (1:0,5 or more) and more costly than road and maritime transportation (1:0,6). Current situation is as „grounding an airplane on each state border".
- 2025-2035 rail vs road: rail transport is faster (approx. 1:2), rail transport is less costly (approx. 0.9:1). Rail approx 2x faster. Assuming 4th railway package is in full effect.
- 2025-2035 rail vs sea: rail transport faster (approx. 1:2.7), rail transport is more costly (approx. 1:0.8). Rail approx 2x faster. Assuming 4th railway package is in full effect.
- 2035-2055 rail vs road cost equal. Rail beats road 1:1,4). Sea is cheaper (1:0,8) but rail is faster (1:1,8).

COMPETITION BORDER: SEA VS RAIL *map by Global Research*

CIVITTA DB

New Corridor plus Rail Baltica

New corridor means new business (N-S-N)

- RB will benefit from **Adriatic Corridor**: Port of Trieste and port of Koper shorten significantly travel time from Turkey, Middle-East and even from India and China. Today: Koper-Wroclav (PL) 2 trains per week, Koper – Czech Republic 4 trains per week, Koper-Germany 5 trains per week etc. Successful pilot of a Fresh Food Corridor reduced fresh food transportation to Scandinavia up to 5-6 days.
- RB's N-S-N potential lies in connecting **inland industrial areas of Europe**. Southern Poland, Czech Republic (Peugeot, Jaguar...) DAIMLER Uusikaupunki already now 500 units per week between EST-FIN
- **Rapid increase of intermodal Turkish cargo towards Finland** through Trieste and Ostrava. Add cargo on the way (Austria, Poland etc).
- **N-S-N traffic on RB for Southern Germany locations.** Less competition with the ports. Considerable trading partners located in Southern Germany.
- N-S-N traffic for greater St Petersburg area. Great N-S-N potential there as well.

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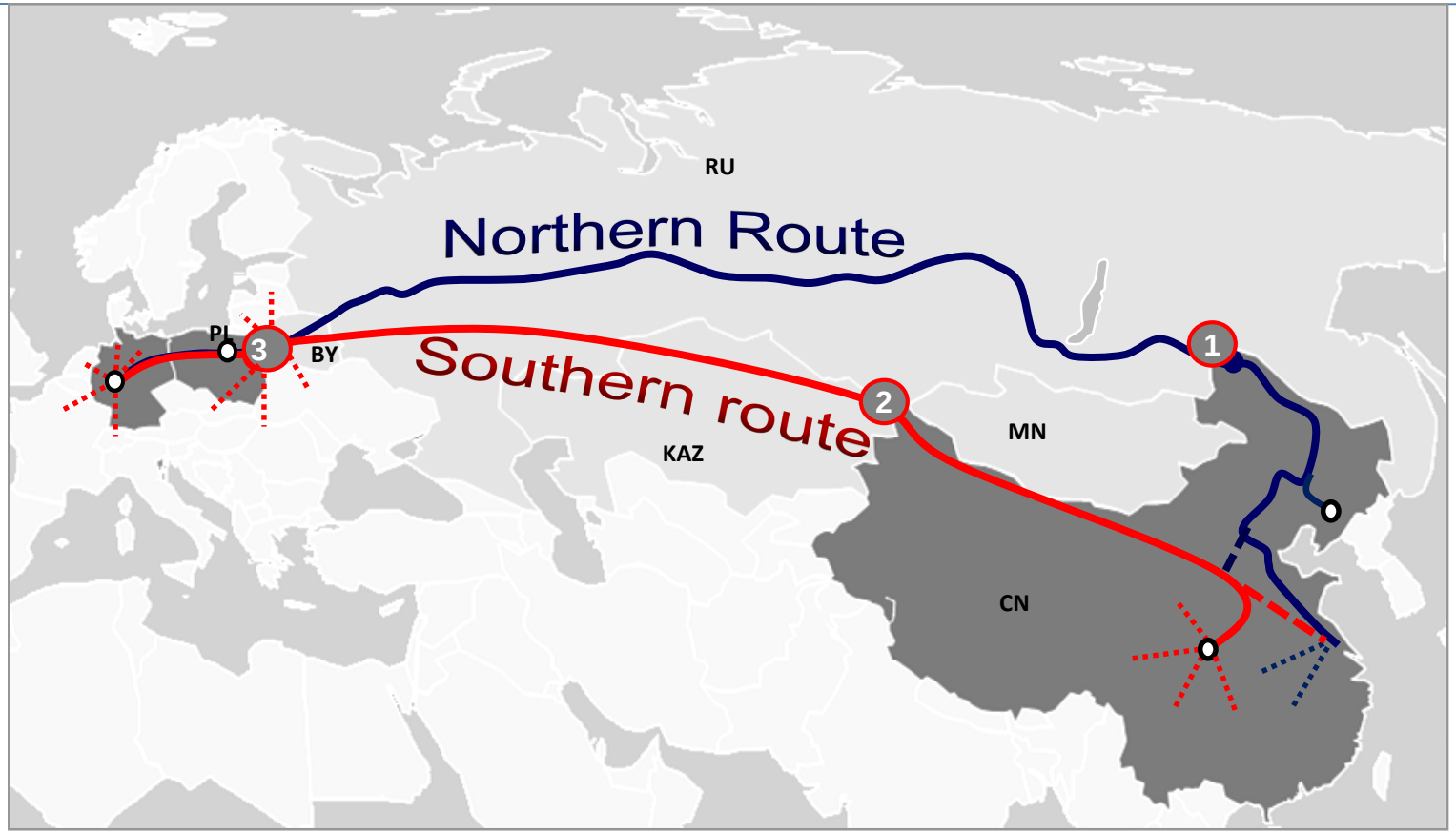
Rail Baltica

Competition for the RB cargo has already started !

CIVITTA

TRANSPORT ROUTES EUROPE - ASIA



track gauge

1435 mm

1520 mm

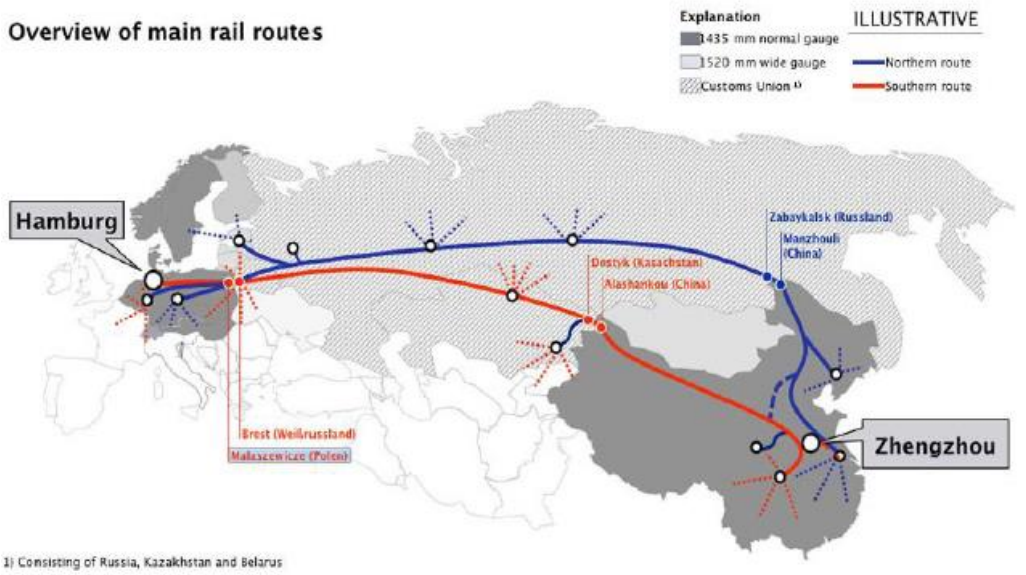
track gauge change

1. Manzhouli (CN) - Zabaykalsk (RU)
2. Alashankou (CN) - Dostyk (KAZ)
3. Brest (BY) – Malaszewicze (PL)

INTERMODAL RAIL TERMINALS - CHINA

Far East Cargo

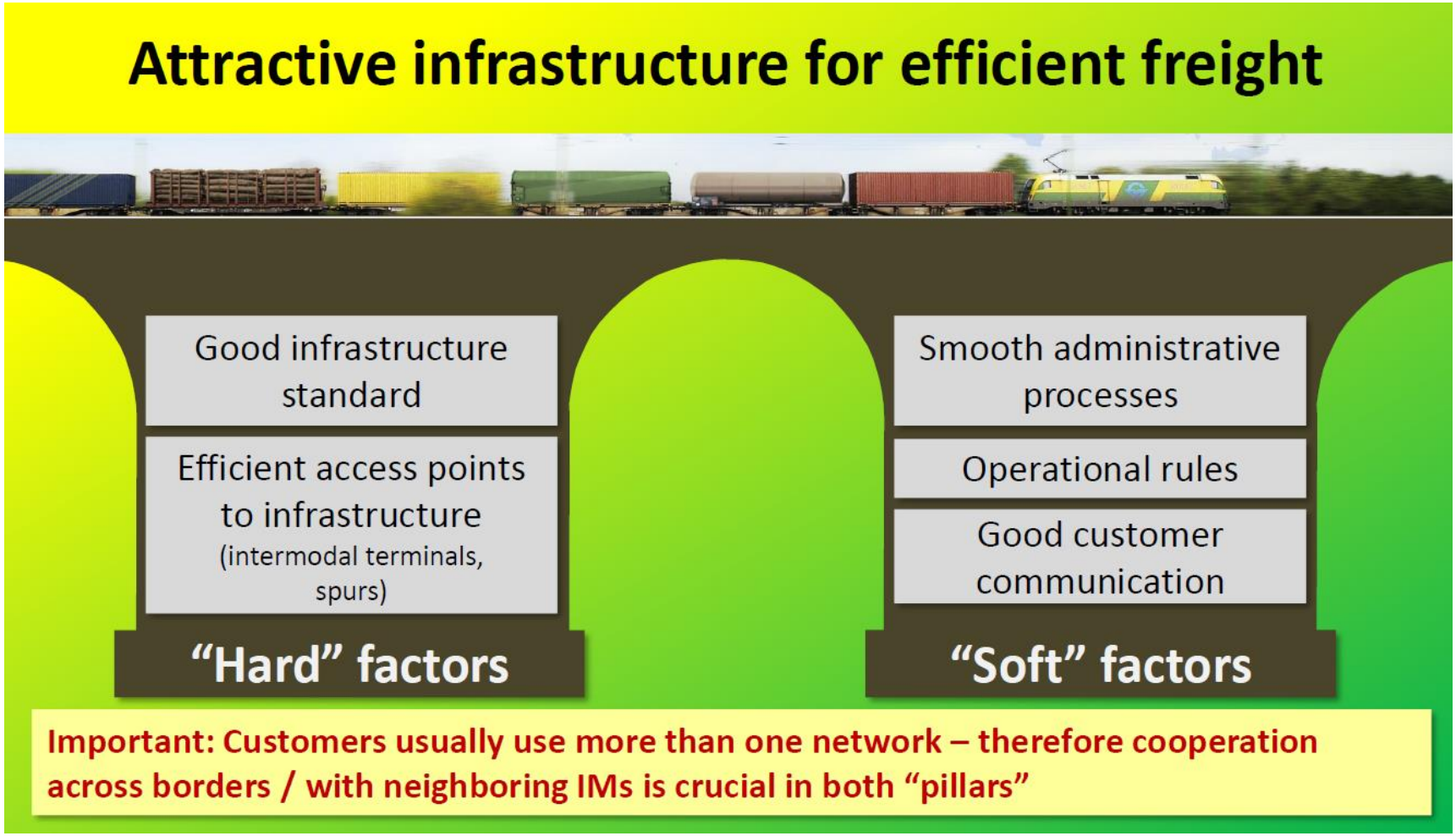
- Majority of current rail cargo between China and Europé is routed via Brest/Malaszwicze (Poland). Inter Europé Freight trains travel at an average speed of just 350-400 km per day. Brest to London takes 5-7 days via existing rail corridors (due to traffic, country authority change)
- Connection via Riga or Ventsils Port for Nordic & UK/Ireland destinations, can lead to 15-30% reduction on transport time, helps to avoid feeder bottlenecks
- Connection via Latvia will make more use of the Trans-Siberia Corridor, which at 1,200 km per day is faster than the 800 km per day routing via Kazakhstan (saving on average 1 day per trip)
- No rail gauge change at the Russian Latvian boarder, saving transport time and cost compared with routing via Brest.
- Fast growing rail freight volume for East West transport to and from the Baltic countries, Scandinavia and UK/Ireland targeted for transit via Latvia.



Our estimate (TEU):		Private entities benchmark(TEU):
2020	na	50 000
2025	50 000	100 000
2030	100 000	230 000

4x

Attractive Infrastructure



Source: Dr. Gerhard Troche, Senior Adviser

Standard and quality of our infrastructure influences the competitiveness of our customers

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Key minimum target standards for rail infrastructure

- Electrification
- Axle-load 22,5 t
- Train length 740 m
- ERTMS (GSM-R + ETCS)
- Line speed 100 km/h

} TEN-T minimum infrastructure requirements (EU-Regulation 1315/2013, Art.39 (2a)

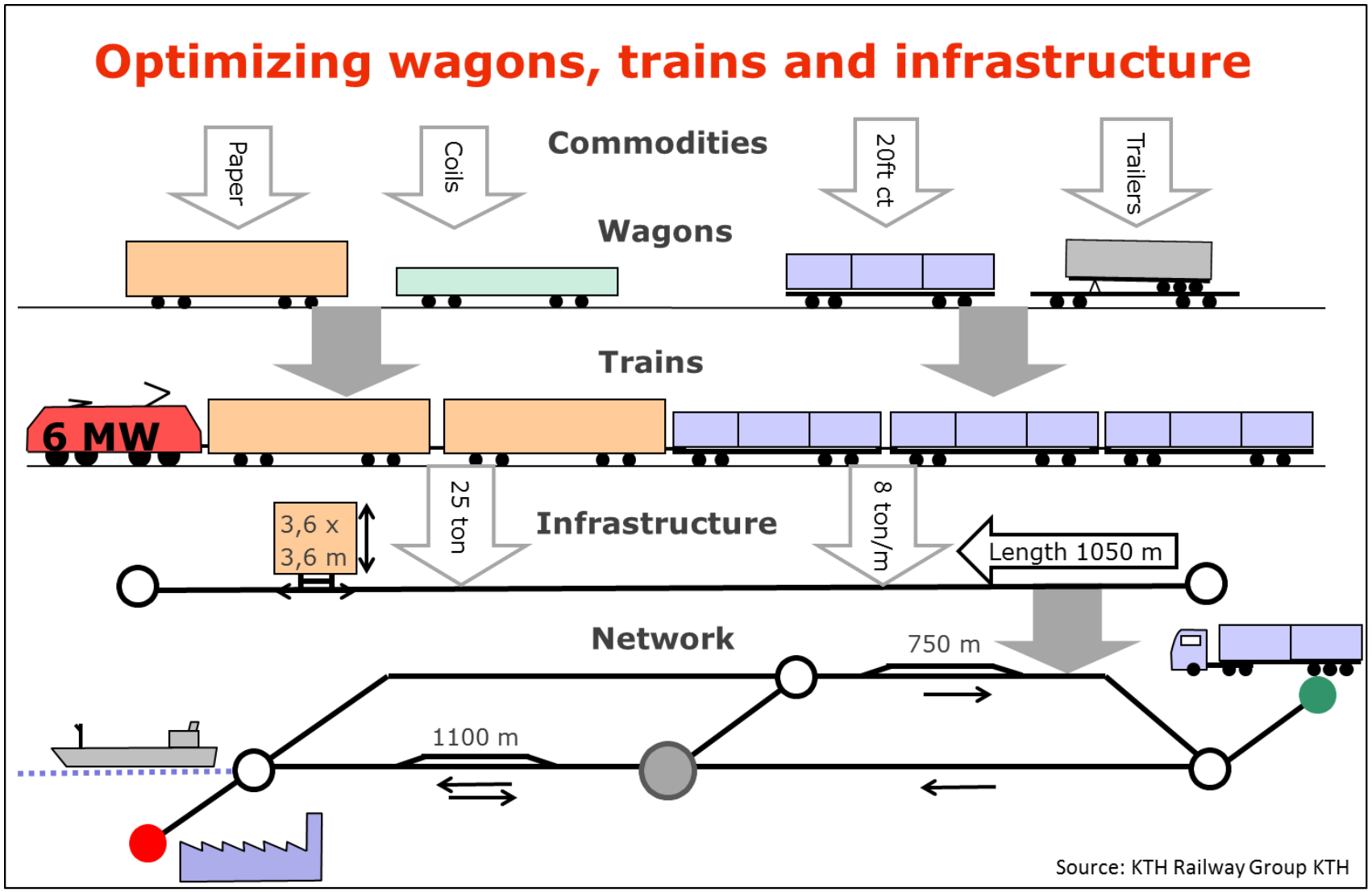
- Intermodal loading gauge: P/C 400

→ **Rail network standard should be in line with – or exceed – the standard of neighboring networks (avoid bottlenecks in infrastructure standard)**

→ **Investment cycles for infrastructure are long – therefore always consider standards beyond legal minimum requirements when planning works !**

Source: Dr. Gerhard Troche, Senior Adviser

Efficient freight - rail freight 2030/2050



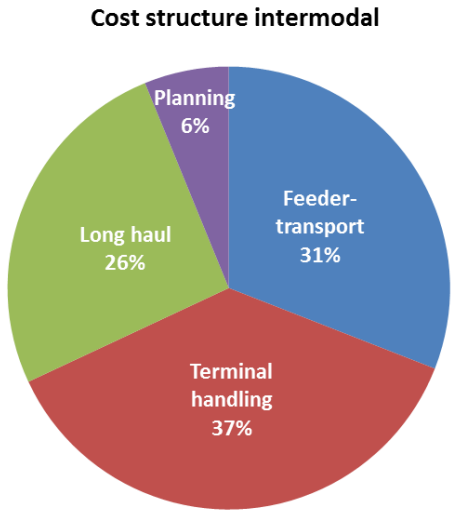
Intermodal - Today´s terminals

Tågoperatörerna

C4R Capacity for Rail

Inter Modal – terminal handling is crucial

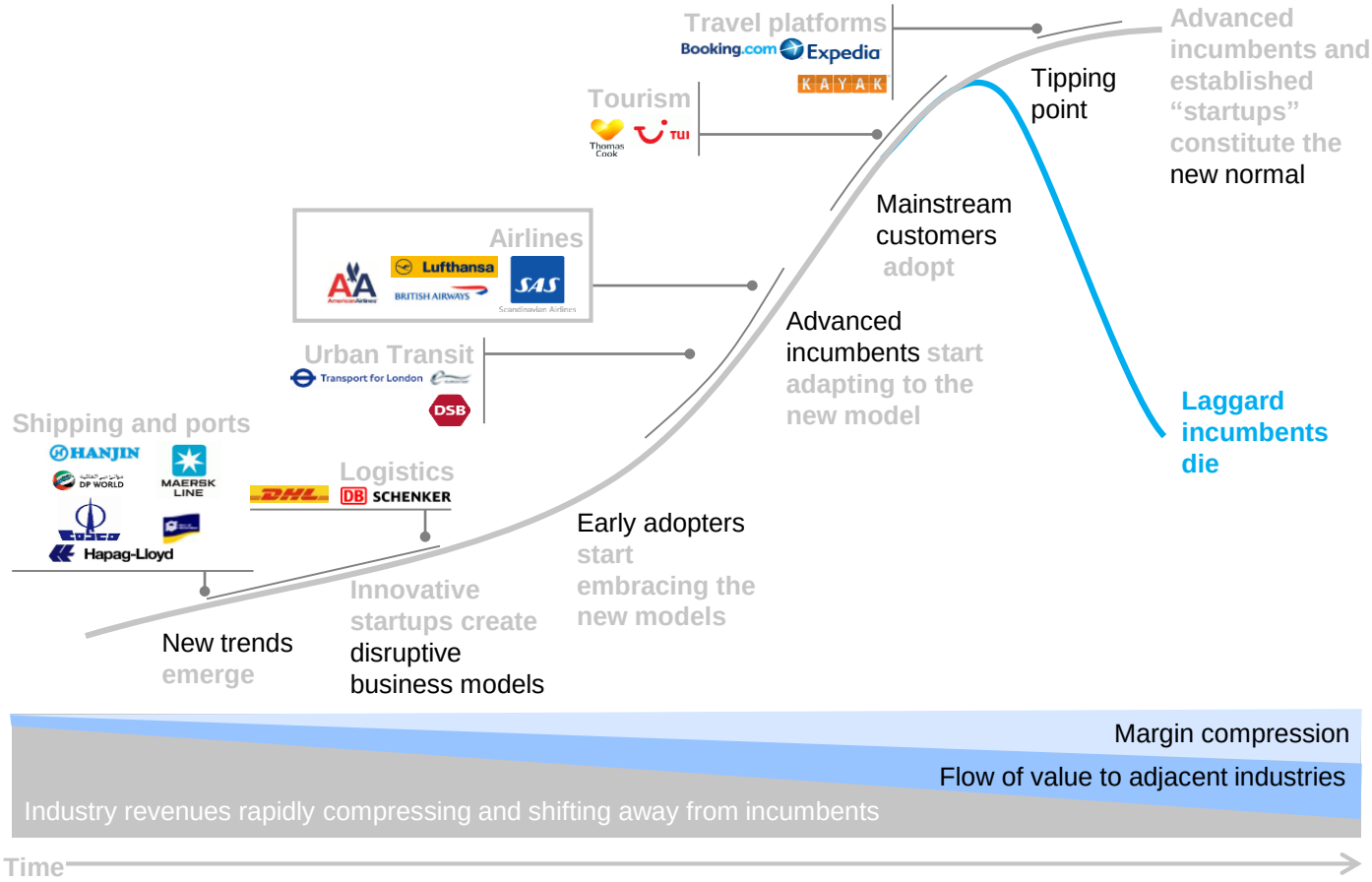
- Terminal costs have a high share of the total transport cost
- Terminals must be built for reach-stackers with big areas with high axle load
- The terminal cannot be electrified – diesel engines are needed to shunt the train
- Tracks has to be built to park the wagons
- Endpoint traffic on long distances – no network



China is building a new Silk Road, and this one is digital

China's National Development and Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce, the white paper (2015) notes:
"China should jointly advance the construction of cross-border optical cables and other communications trunk line networks, improve international communications connectivity, and create an information Silk Road. We should build bilateral cross-border optical cable networks at a quicker pace, plan transcontinental submarine optical cable projects, and improve spatial (satellite) information passageways to expand information exchanges and cooperation."
Moreover, in 2016, China's State Council issued the "13th Five Year Plan, which dedicates a specific section on improving internet and telecommunications links across BRI countries. In particular, the five year plan emphasizes the creation of land and sea cable infrastructure, an Internet Silk Road between China and Arab States, and the creation of a China-ASEAN information harbour.

The rail industry may soon face the tipping point of the digital lifecycle

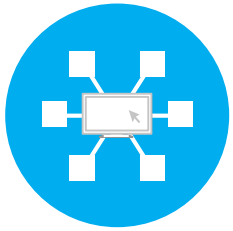


SOURCE: McKinsey & Company

6 disruptions could fundamentally change the travel and transportation industry

Current disruptions

Upcoming disruptions

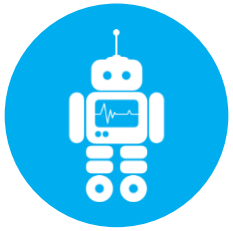


Online platforms

"Traditional TTL companies as capacity providers only?"

Expansion of large technology companies

"Fear of the hungry tech giants?"



Advanced robotics

"Fundamental changes to cost structures?"

Asset sharing

"*The* door opener for innovative startups in the industry?"

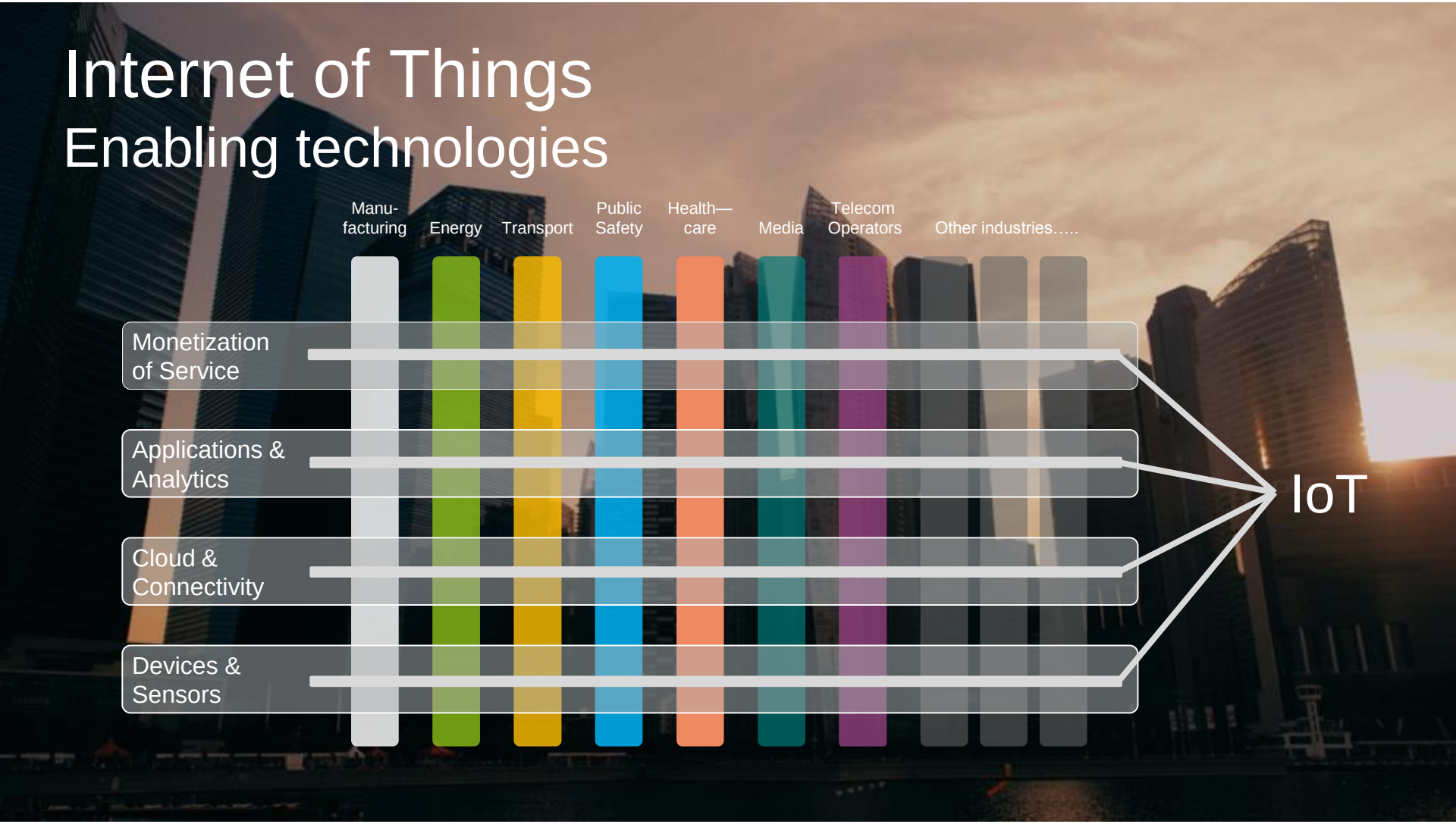
Autonomous vehicles

"Cost structures, opportunities, competitors – will everything change?"

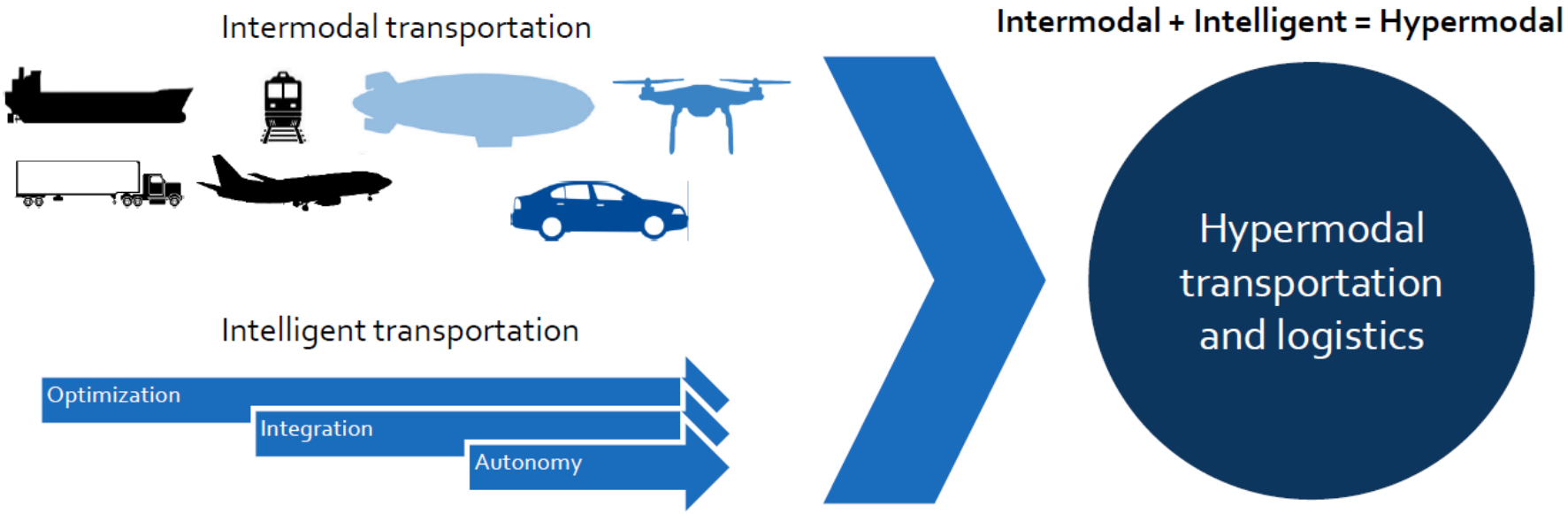
Additive manufacturing

"The 'big hit' to the logistics industry?"

Internet of Things
Enabling technologies



Hypermodal transportation



Källa: Lux Research,
Towards Intelligent Intermodal Trade Industrial Big Data and Analytics in Transportation and Logistics

Todays freight traffic to Nynäshamn

Source: Stockholms Hamn, Ventspils Port

The voice of industry, operators, shippers and ports

- Operators and shippers wants **solutions for Scandinavia**, today it goes via Poland and Belarus. Large volumes to Germany get stuck at Brest/Malaszwicze. **Too long waiting time in Brest**, 4 days…. Too little capacity…Opportunity for other options
- Disadvantage for Latvia with just one freight connection to Sweden
- **Attractive with Rail Baltica** through the Baltic states to Finland and to establish a Swedish connection from Riga to i.e Norvik (Stockholm).
- **Huge interest in Sweden** to find solutions to connect Scandinavia with China and Asia. China needs increase freight four times until 2024.
- **China is very interested** to connect and invest in the Baltic States
- Several Baltic Sea ports focus on goods for transport to/from China
- Riga is **well positioned** for the future, especially if the **ferry connections** to Sweden, is expanded. Medium sized container traffic and reduced lead times. Frequent 400-500 containers shipments.
- Russia interferes but wants to quadruple traffic until 2024
- Poland will be come even more competitive due to upgrading infrastructure to 2024. Before Rail Baltica is established….
- Swedish companies such as ABB, Volvo, Uddeholm, IKEA, among other are very positive. Milkpowder will increase if Russian embargo is lifted.

Branschföreningen Tågoperatörerna

Stockholm Norvik Harbour 2020

- Sweden's new port for rolling goods and containers on Norvik outside Nynäshamn.
- Stockholm Norvik Harbor becomes a new logistics hub in the growing Stockholm and Mälardal region.
- The port is built to accommodate the largest vessels moving in the Baltic Sea.
- A new railway is being connected to Nynäsbanan and Stockholm

Branschföreningen Tågoperatörerna

Thank you!

Think Big, Start Small, Act Now!

Björn Westerberg, CEO, ASTOC
Mobil: +4673 - 802 67 11
E-post: bjorn.westerberg@tagoperatorerna.se