



N.E.W.

THE NORTHERN EAST WEST (N.E.W.) FREIGHT CORRIDOR

A global trading route

La route du commerce mondial

Alþjóðleg flutningaleið

En global handelsrute

En global handelsväg

Maailmanlaajuinen kuljetusväylä

Всемирный торговый путь

Дүниежүзілік сауда жолы

全球贸易通道



Mr. Matsuda,
Chairman East
Japan Railway
Company;
Vice President UIC;
Chairman UIC
World Executive
Council.

Project Principal: International Union of Railways (UIC)

Globalisation of economy, increasing economic activity in Asia, need for safe and efficient transport links are the key drivers for UIC's efforts in developing major international rail corridors in close partnership with other modes.

NEW Corridor will be one of the primary transport axis serving the global economy in 21st century and will contribute to sustainable economic development of Central Asia, Mid-West China and Barents region of Northern Europe.



Mr. Kari Konsin,
Project Chairman.

Project Chairman: Mr. Kari Konsin, The Finnish Rail Administration

During the last years of project work, the N.E.W. Corridor has gained international acclaim. Stronger focus on congestion and security has made this corridor a viable alternative for cargo owners. Even though some challenges remains and our perspective is long-term, we have seen great progress.

Executive Project Office (EPO): Transportutvikling AS

Mr. Stig Nerdal,
Project Manager.



Due to the lack of integration policies, isolated logistical elements may have high levels of productivity, while the transport corridor as a whole may be less efficient.

Separate legs of the N.E.W. Corridor are already in operation. Our main objective is to put the pieces together into a continuous chain.

The N.E.W. Corridor is considered an innovation. Our main challenge is to demonstrate the opportunity, which also includes a short-term financial challenge.

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Some authorities and Organizations involved in the N.E.W. project



China

- Ministry of Railways
- Chinese Railways (CR)
- SINOTRANS



Russia

- JSC "Russian Railways"
- TransContainer (JSC RZD)
- The International Coordination Council on Trans-Siberian Transportation (CCTST)



Kazakhstan

- CJSC NC "Kazakhstan Temir Zholy"



Finland

- Finnish Railways VR Ltd
- Finnish Rail Administration



Sweden

- Swedish National Rail Administration
- GreenCargo AB



Norway

- Ministry of Transport and Communications
- The Executive Committee of Northern Norway
- Futurum AS
- Nordland County
- Narvik Municipality
- Norwegian National Rail Administration
- Port of Narvik



Iceland

- Ministry of Communications



USA

- U.S. Dept. of Transportation
- U.S. Dept. of Homeland Security
- U.S. Dept. of Commerce
- American Association of Railroads (AAR)



A global trading route

La route du commercial mondial



① A global trading route

② La route du commerce mondial

③ Alþjóðleg flutningaleið

④ En global handelsrute

⑤ En global handelsväg

⑥ Maailmanlaajuinen kuljetusväylä

⑦ Всемирный торговый путь

⑧ Дүниежүзілік сауда жолы

⑨ 全球贸易通道

The Northern East West (N.E.W.) freight corridor

■ ■ ■ A GLOBAL TRADING ROUTE



Legend

- N.E.W. sea route.....
- N.E.W. main rail routes.....
- Other stretches of railway.....
- Incomplete rail connection (by Archangel & Perm).....
- Alternative routes (blue: sea, red: rail).....
- Railway gauge change.....
- Sea routes (Coasts of Norway & East Russia).....
- Rail distribution.....

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A visionary idea gaining international acclaim

In 1997 the business development company, Futurum AS (Norway), launched the visionary idea of a transport corridor between the North America, the northern parts of the Nordic countries, North West Russia and North Western China.



«The Chinese Railways are willing to Contribute Greatly to the Development of the N.E.W. Corridor.»

Mr. WANG, Vice President,
China Railway Container Transport Co. Ltd
(November 18, 2003 in Paris)



The N.E.W., International Freight Corridor Workshop.

The idea was to use the port of Narvik, located in Northern Norway, as the port for reloading between sea and rail. The port of Narvik was chosen because it is ice free all throughout the year, and it is the only port in the North Atlantic with a straight railway connection to Sweden, Finland and Russia. In 1997 the focus regarding cargo to be transported on the route was fish resources from the Barents Area/Iceland and export of paper, metals, etc. from the Nordic countries.

The conceptual idea was well received, and in the year of 2000 /2001, UIC (The International Union of Rail-

ways) initiated the current work. With UIC in charge, the project obtained a global perspective, and several countries in Central Asia became involved. Because of the UIC initiative, the visionary idea of the N.E.W. Corridor is now gaining international acclaim as being a freight corridor of the future.

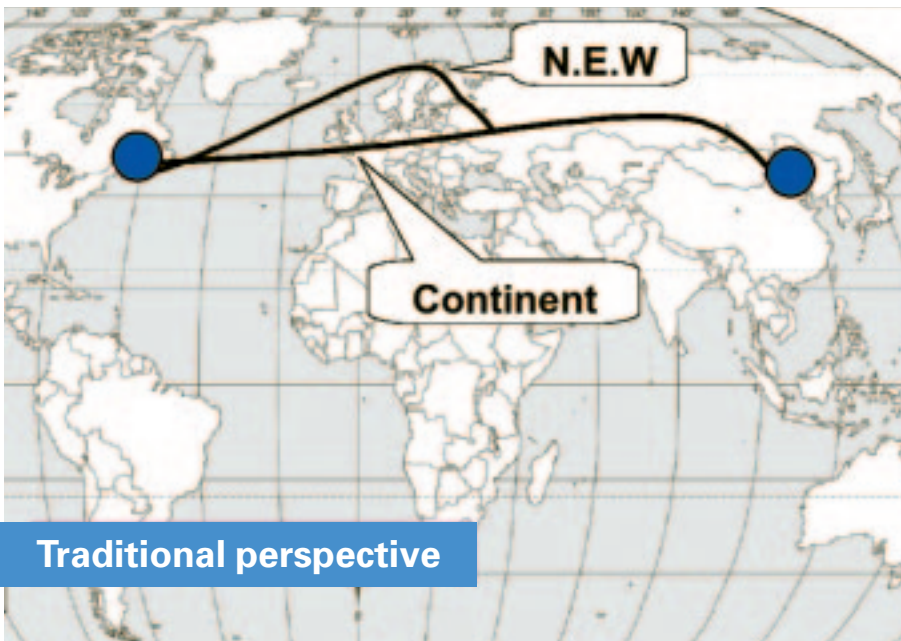
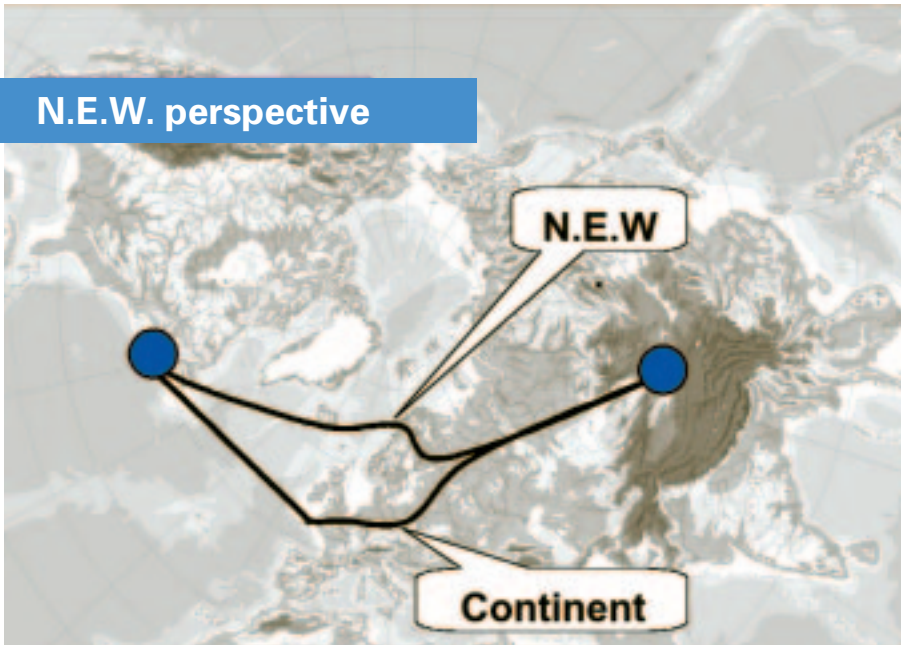
In September 2001 the Executive Project Office for the N.E.W. Corridor, Transportutvikling AS, launched UIC's main report for the corridor. This report presents the concept in detail. This document is an update and a brief overview of the N.E.W. Corridor.

The acronym N.E.W.

The North East West Freight Corridor, N.E.W. for short, is an innovative intermodal transport corridor, which links the North American East Coast to Russia, China and Central Asia, via the port of Narvik, Norway and the railway system in the Nordic Countries.

N.E.W. represents shorter distance, has less complicated border crossings and utilizes less congested areas than existing alternatives. N.E.W. would be an alternative, or a supplement, to the existing routes.

N.E.W. perspective



Traditional perspective

The two maps visualize different distance perspectives for the N.E.W. Corridor and East-West routing through Central Europe. The traditional map suggest that the N.E.W. Corridor would provide a large deviation. In reality the distance is basically the same between the two routings.

© Transportutvikling AS, 2004

The conceptual idea

During the last three years, the International Union of Railways (UIC), together with several partners, has prepared the concept for an East-West transport corridor between North America and Russia/Central Asia through the Nordic countries and the Barents area.

Ocean transport between the North American East Coast and Northern Norway and rail transport between Norway, Sweden, Finland, Russia, Central Asia and China, constitutes the main elements of the corridor. The project's

original focus was the importance of the corridor as a catalyst for further development of the industries in the Barents region. Today, the N.E.W. Corridor involves a larger market.

The main ideas of the N.E.W. Corridor are (still) to stimulate growth in European outlying areas outside central Europe as well as to establish a global east-west alternative/supplement to relieve pressure from current routes in a freight market where cargo is growing faster than present solutions can accommodate.

N.E.W. is an east-west intermodal transport route connecting the North American East Coast and Central Asia

via the Atlantic Ocean, intermodal port(s) in Northern Europe and railway to Eastern Europe and Asia. An important criterion for the development of the route is that the N.E.W. Corridor does already have a continuous railway from the Atlantic port of Narvik at the Atlantic coast through the Nordic countries to Russia, Kazakhstan and China. The entire land bridge represents the best alternative for east-west transports within as well as to/from the Barents region.

By utilizing the less congested ports of the North American East Coast and ice-free ports in Northern Norway in addition to the eastbound railway system east of Norway, the N.E.W. Corridor aims to be a main alternative as well as a supplement to existing East-West routes.

«This corridor is a model and a leading project for the UIC»

Mr. Matsuda, Chairman of the UIC World Executive Council and C.E.O. of the Japanese Railways (November 21, 2001, at the 12th World Executive Council in Paris)

UIC

Out of the conceptual mode

The N.E.W. Corridor has obtained strong political and commercial interest, and several partners have committed resources to the development of the corridor. It is an intention to establish the N.E.W. Corridor as a model for further corridor activities and prepare conditions for permanent commercial operation subsequent to a demonstration run.

«Mitsui are committed to work closely with UIC for the N.E.W. Corridor and will participate in a potential trial run»

Mr. Matsuda, Chief Operation Officer, Mitsui Company, Helsinki (June 29, 2003 in Helsinki)

GLOBAL/JAPAN

Global challenges and the N.E.W. Corridor

New transport corridors can be a tool for regional development as well as generating economical benefits to the market players. Strong focus on environment/congestion and security are examples where the N.E.W. Corridor can contribute.



N.E.W. avoids congestion

International trade and transport volumes grow very fast. The global container market is growing more rapidly than present solutions can accommodate.

This growth requires investments in the existing transport corridors and/or new supplementary transportation solutions.

According to EU Transport Policy 2010 (Time to Decide), congestion "is now beginning to threaten economic competitiveness" and that "there is a serious risk that Europe will lose economic competitiveness". We can also

«This project figures on the top of our agenda»

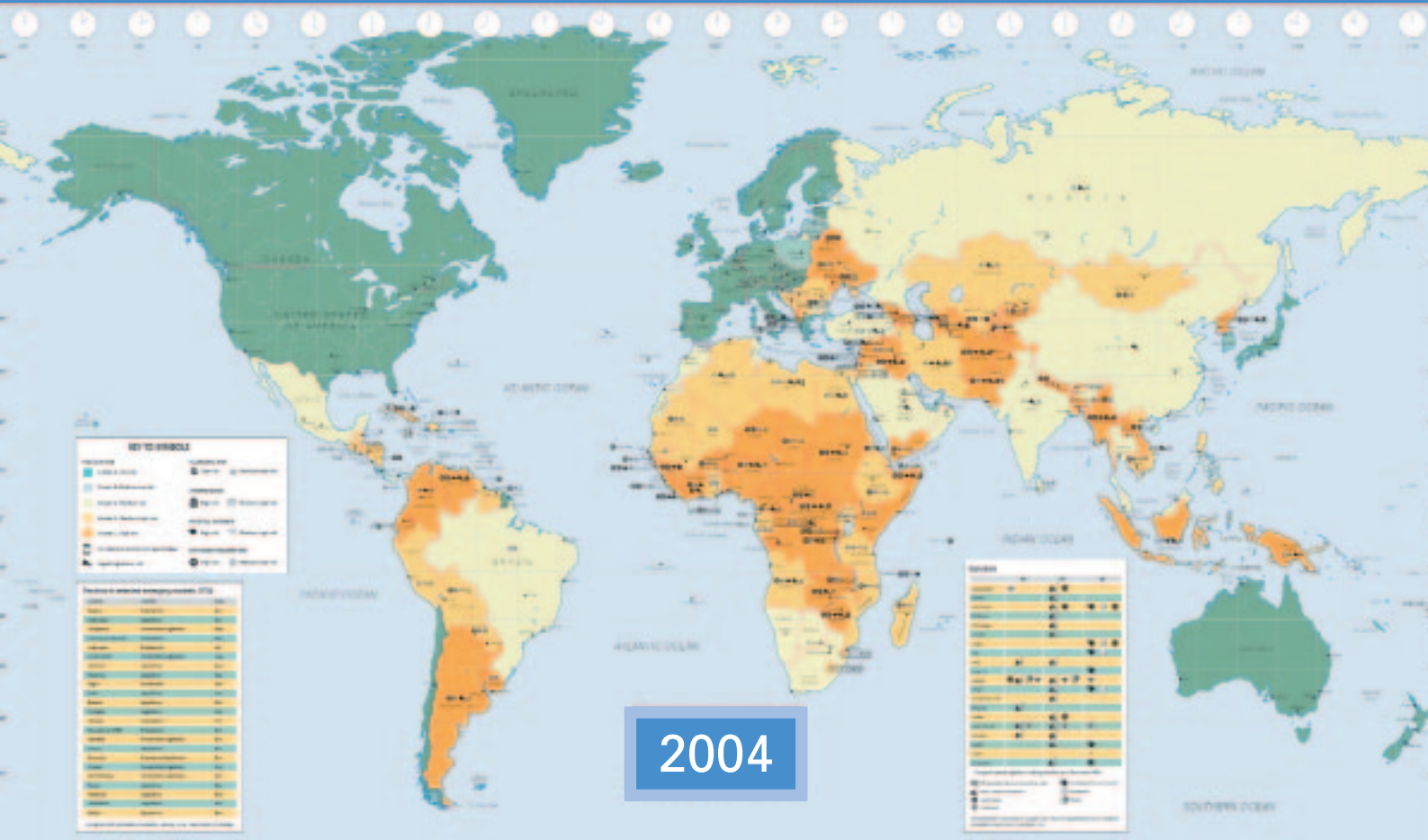
Vice Minister, MPS, Mr. Ziabirov
(Dec 9th 2002 in Beijing)

RUSSIA

US West Coast ports welcome N.E.W. Corridor

A senior official at a major US West Coast (USWC) port recently stated that 'USWC ports would welcome this (N.E.W.) pressure relief valve'. They foresee a port capacity problem in the next 10-20 years, and therefore realize the need for supplemental transport corridors. The US Dept. of Transportation predicts that the rail capacity for the US Landbridge will become a problem during the same time frame.

The above comes in addition to the growing demand by shippers for services to the US East Coast following the shut out in USWC that brought billions of US dollars of losses last year.



Political and economic risk

With more than 60 offices around the world, AON Trade Credit is one of the world's leading provider of political & economic risk analysis and insurance brokerage services.

Source: AON. For updated information: www.aon.com/us/politicalrisk

CHINA

«China will support this corridor»

Vice Minister SUN, MOR China
(Nov. 5. 2003, Narvik)

foresee environmental restrictions occurring in areas connected to the traditional transport routes and that alternatives outside the main routes have to be developed.

Congestion is a serious problem and the marginal cost of making investments for increasing capacity in congested areas may be higher than doing the same investments in less populated areas (where people and infrastructure do not need to be moved). The N.E.W. Corridor will be operating through less congested ports and areas than most alternative routes.

A safe global corridor

The world changed subsequent to September 11, 2001. Important security issues became even more important. Guided by US Authorities, several countries have taken precautions to secure their homeland, including mobility of people and cargo. This situation has, and will have, strong impact on freight transport and port operation. Focus on risk will prevail, including political and economical risk. It will be one of the major challenges of the future and will have impact on the choice of future freight corridors.

According to AON only a few countries throughout the world are considered low risk, when it comes to the threat of economic downturn, terrorism and political risk.

The nations with low risk includes important transit countries in the N.E.W. Corridor like Iceland, Norway, Sweden and Finland.

The map (above) indicates political and economical risk (AON 2004). Green

color shows countries where the estimated risk is low.

Compared to several routes, the N.E.W. Corridor, is a transport alternative where risk is low.

According to United Nations estimate, up to 80% of the approximately 6bn metric tons of cargo traded each year is moved by ship. Of that almost 75% passes at some point through one of the 5 main choke points in the seafaring economy –the Panama Canal, the Suez Canal, the Straits of Gibraltar, the straits of Hormuz and the straits of Malacca. A terrorist attack could seriously disrupt the international trade.

KAZAKHSTAN

«We want to bring to your attention that CJS NC KTZ is interested in having this project realized»

Mr. Zhangaskin, First Vice President,
CJSC NC Kazakhstan Temir Zholy,
Letter to EPO (December 29, 2003)

Market indications



The N.E.W. Corridor runs through numerous countries on three continents. However, the market for the corridor is not only within these countries, but also in several of the countries bordering the N.E.W. Corridor.

Globalisation and world trade

Globalization is a fact, making the world more and more like a global village bound together by continuous advantages in communication technologies and trade of goods and services. According to a survey by the Paris-based "International Chamber of Commerce" and the Munich-based economic research institute "Ifo" released in February 2004: "Sustained growth is expected in *all regions* of the world". The favorable global conditions are also expected to have beneficial effect on export/import performance worldwide and thus on the world trade.

In the first half of 2003 world merchandise exports rose by 15% in dollar terms over the corresponding period in 2002, a strong acceleration compared to the average 4% annual growth in 2002.

The trade recovery in 2002 benefited from strong import demand in developing Asia, the transition economies and the United States.

«The N.E.W. corridor is a transport route with a tremendous potential»

Mr. CAI, Vice Minister, Ministry of Railways PR China (December 9, 2002 in Beijing)

China's trade expansion (both exports and imports) remained outstanding. In the 1990s, China's trade growth was three times faster than global trade and between 2000 and 2002 its exports and imports rose by 30%, while world trade stagnated. China has become the fourth largest merchandise trader (if one counts the EU as a single trader) in 2002. The phenomenal growth in the global trade can be illustrated by the fact that Chinese ports alone handled 48 million TEU in 2003, more than any other country in the world. This represents an increase from 2003 of 29.7%, when the country handled 37 million TEU.

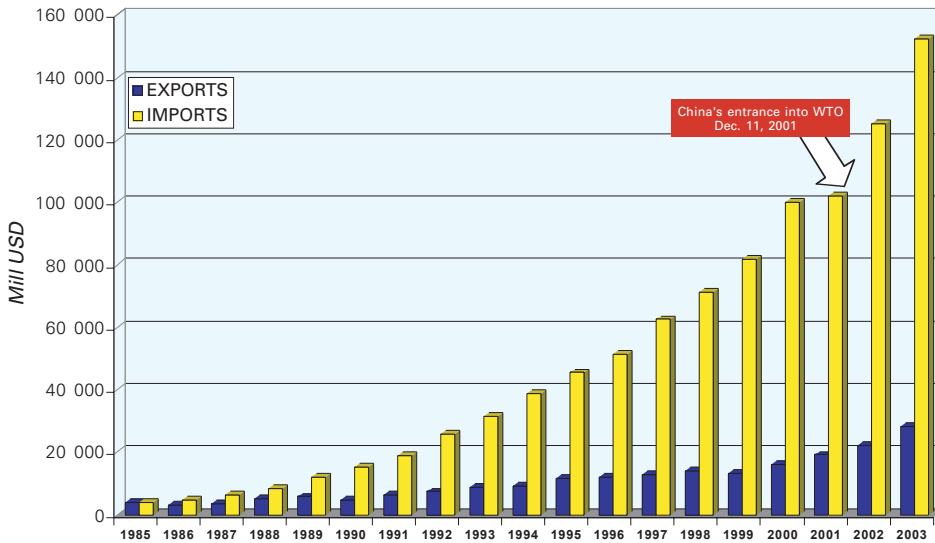
CHINA

Country	Capital	Population (1.000)	GDP (Mill.USD)	GDP per.cap. (USD 1,000)	Railways Km (total)	Gauge
Canada	Ottawa	31 414	715 692	22.8	49 422	Standard
China	Beijing	1 280 975	1 237 145	1.0	71 600	Standard
Finland	Helsinki	5 199	130 797	25.2	5 850	Broad
Iceland	Reykjavik	284	8 608	30.3	0	-
Kazakhstan	Astana	14 795	24 205	1.6	13 601	Broad
Norway	Oslo	4 539	189 436	41.7	4 077	Standard
Russian Federation	Moscow	144 071	346 520	2.4	87 157	Broad
Sweden	Stockholm	8 924	229 772	25.7	11 743	Standard
United States	Washington DC	288 369	10 416 820	36.1	228 952	Standard
TOTAL YEAR 2002		1 778 569	13 298 995		472 402	

The table illustrates some main information concerning the countries, which are connected to the N.E.W. main routes. We have also included some information about railway length and gauge.

Sources: UIC, World Bank Group and AAR © Transportutvikling AS, 2004

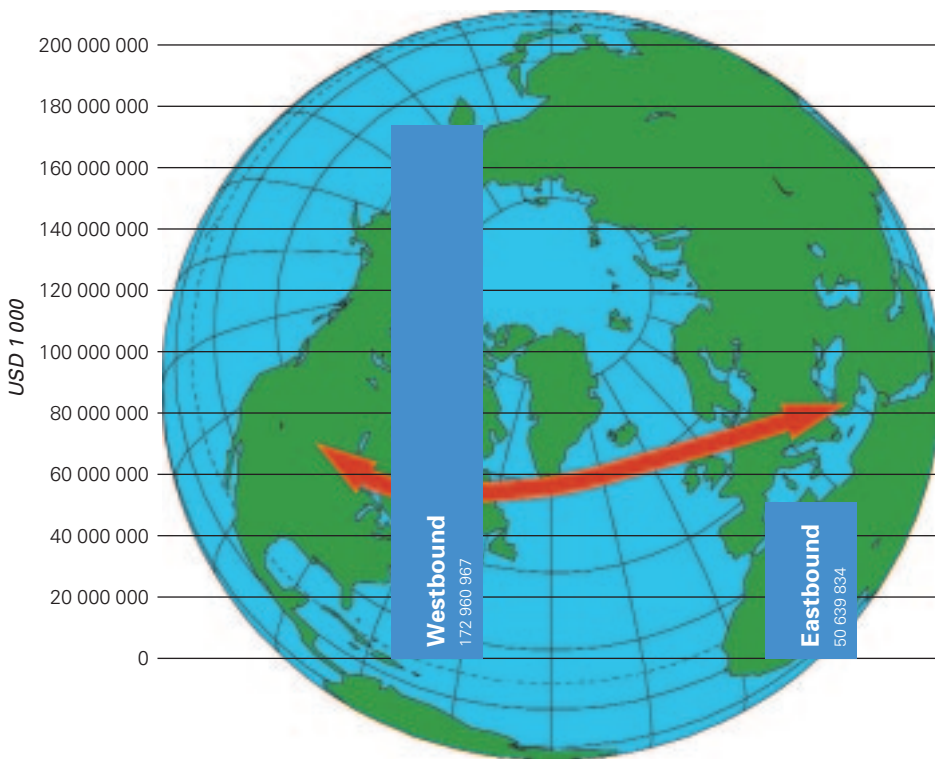
US trade with China 1985–2003



In this figures we have used US' trade with China. Chinas export to US (2002) is 40 times higher than in 1985. Even though the trade is heavily imbalanced, import to China (from US) also shows steady growth.

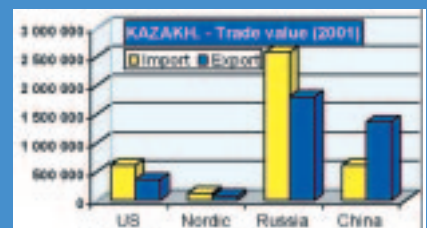
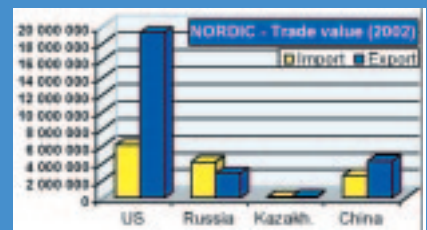
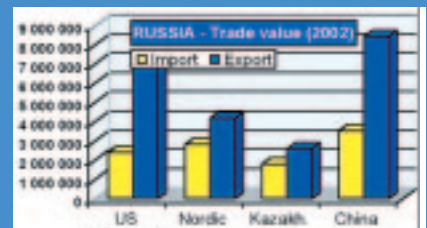
Source: US Census

Total trade along the N.E.W. Corridor



Graphics by: Transportutvikling AS

USD 1000



Data source: UN Comtrade
Graphics by: Transportutvikling AS

TRADE LANES IN THE N.E.W. CORRIDOR

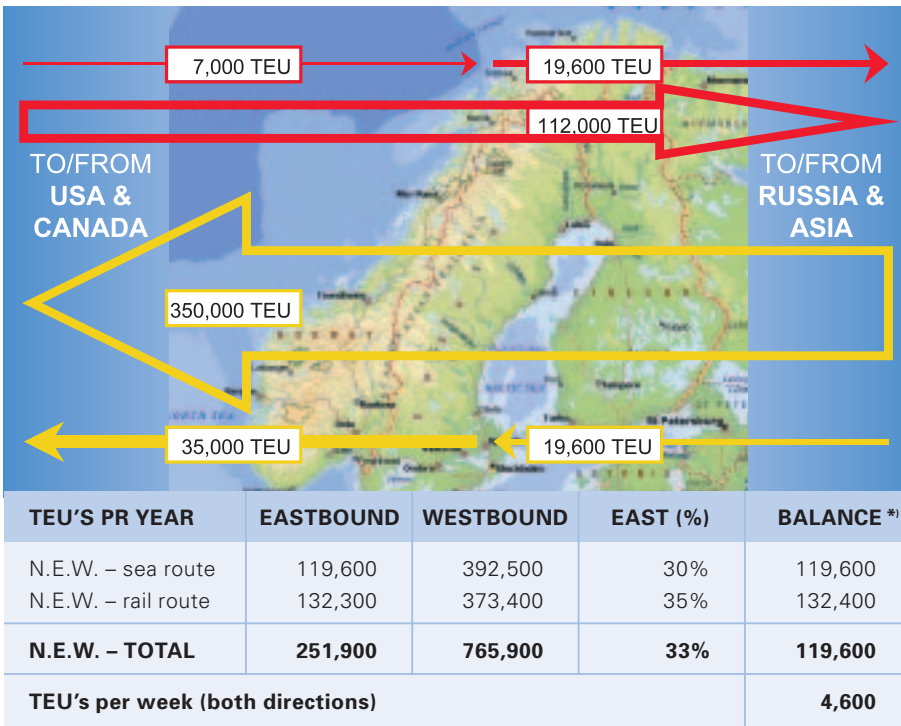
The 5 figures visualizes the trade lane between major regions/countries in the N.E.W. Corridor. The US import is dominated by China and the Nordic countries counts for more (both export and import) than Russia and Kazakhstan together. Russian export and import are more balanced while the Chinese figures show the same picture as the US figures. Export to US totally dominates the picture. Kazakhstan have strong trade relations with Russia while export to China is twice as much as the import.

The figures visualizes trade in value. Several market analyses for the N.E.W. Corridor have been conducted where volume (container units: TEU) have been estimated. They do all indicate a large potential.

«The Midwest of China did in 2002 export more than 130,000 TEU to Europe and close to 200,000 to US. If only 50% of this volume could be carried out by train it will represent approximately 4 daily trains along the N.E.W. Corridor»

Mr XIAO, Managing Director, SINOTRANS, China
(June 29, 2003 in Helsinki)

Estimated container volumes (N.E.W.) Updated: May 2004



© Transportutvikling AS, 2004

*) The balancen numbers represent the maximum number of TEU's that would create a fully balanced trade East- and Westbound for respectively the:
 • N.E.W. – sea route,
 • N.E.W. – rail route, and the
 • N.E.W. Corridor total.

The figure is a visualization of the current TEU estimates from the UIC/N.E.W. study. (Transportutvikling AS, 2004).

The arrows shown on the figure represents direction and volume. The figure visualizes only a portion of the container volumes since several commodities are excluded and US does only include some few states at the East Coast.

The westbound volume dominates the trade. However, more than 119,000 TEU's was a conservative estimate of the annual balanced potential for the corridor. More than 4,600 TEU's is the weekly potential both ways, – representing 2,200-2,300 TEU eastbound and the same number westbound. It was concluded that the potential could have been calculated higher.

The UIC/N.E.W. study identified TEU's, destinations, origins and commodities. The study identified 100 different commodities, export, import, modes etc. An example of huge volumes is the containerized export from China where the destinations were only the East-Coast states in US. Several commodities are exported. Footwear, toys and furniture alone counts for almost 100,000 TEU!

«This project is both revolutionary and realistic»

Mr. Hyvarinen, Honorable Chairman of Finland – NorthEast Asian Trade Association and ex. Ambassador of Finland in China (December 9, 2002 in Beijing)

FINLAND

A view from SINOTRANS

SINOTRANS is China's largest forwarder and third largest shipping line. SINO-TRANS is involved in the N.E.W. Corridor project and they have concluded that there is a great potential for transport between Central Asia and Western markets.

The *Midwest region of China* exported (2002) more than 130,000 TEU to Europe and close to 200,000 to US. If only 50% of this volume could be car-

ried out by train it will represent approximately 4 daily trains along the N.E.W. Corridor.

The Management of SINOTRANS put strong emphasis on China's campaign for developing the western part of China and considers N.E.W. as important for this development. According to SINOTRANS, one of the most important benefits of N.E.W. is the potential for reduced transit times.

SINOTRANS has made concrete proposals (May 2003) regarding important element when developing the

N.E.W. Corridor. Their proposals include train priorities, price level, transit times, border crossings, information and documentation.

SINOTRANS is full of confidence regarding the N.E.W. Corridor development and is willing to make common efforts with the Committee/Project Team to achieve common goals. The Chairman of SINOTRANS Ltd. has informed that SINOTRANS shall establish an internal committee which will work on issues related to N.E.W.

Reform and export growth to unleash Russian volumes

Russia's overall container traffic will grow 370% to exceed 7 million TEU in 2012, according to German consultancy Trans-Care, following a study commissioned by multi-terminal operator National Container Company. Russia's overall container traffic amounted to 1.5 million TEU in 2002. Of the forecast 7m, over 5m is expected to be handled at ports. The N.E.W. Corridor could be utilized for part of this container cargo.

Source: Containerization International (May 2003)



Transport routes

The main components of the N.E.W. Corridor are a land-transport leg and an ocean leg.

■ The sea leg

consist of ocean transport between Narvik and North America. The Atlantic distance corresponds to the railway distance between Finland and Urumchi in Western China.

■ The land transport leg

consists of railway transport between the Atlantic port in Narvik, through Sweden, Finland, Russia and Central Asia/Asia. The land transport leg involves more than six countries and two gauge changes (Sweden/Finland and Russia¹⁾/China).

¹⁾ Or CIS nations like Kazakhstan

N.E.W Corridor Ocean leg

Port structure west of Norway is an illustration. The actual sailing schedule depends on market conditions.
© Transportutvikling AS, 2004



A brief introduction to the ocean leg

The ocean leg is common for all railway alternatives. The ocean route operates in ice free areas and the main route is across the Atlantic Ocean between Narvik (Northern Norway) and ports at

the North American East Coast. Transshipment or call at ports on Iceland will not cause any deviation.

The sailing distance and indications of transport time between Narvik and some Atlantic ports are listed in the figure.

The actual sailing time depends on vessel's type, sailing schedule and weather conditions. In the figure, 15 knots is used as an average speed. This is a very conservative speed estimate,

«The N.E.W. project is an example how to work and succeed with international corridors»

POLAND

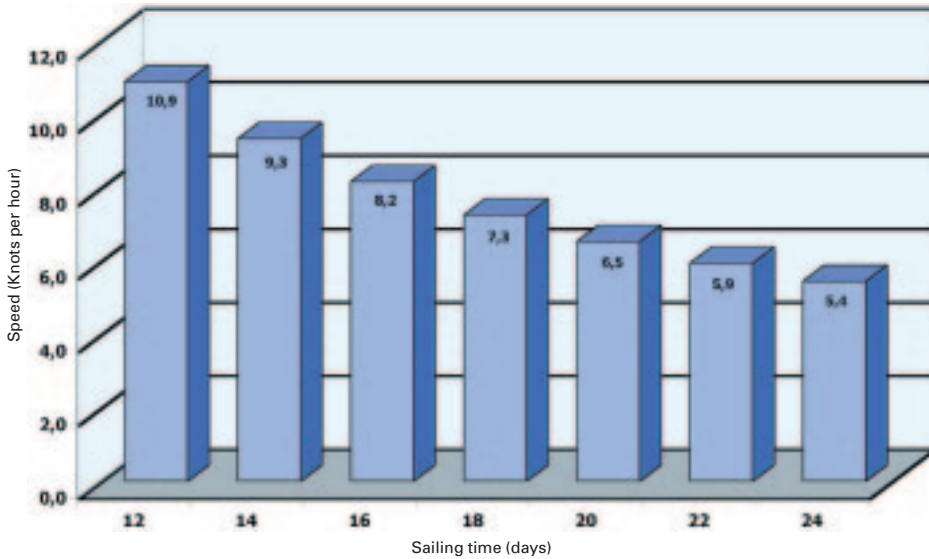
Mr. Wieladek,
Chairman of Polish Railways, PKP
(December 9, 2002 in Beijing)

«The US DOC and the US DOT look forward to making this concept a reality»

USA

Ms. Kathryn Hollander, Deputy Director, US Dep. Of Commerce (December 9, 2002 in Beijing)

Transport time: Direct sailing Narvik–Halifax



The figure visualizes different transport times between Norway and Canada based on direct sailings and different speed assumptions.

© Transportutvikling AS, 2004

considering that some of the ocean crossing container ships average 20 knots and even higher speeds. The distance between Narvik and Halifax is 3,121 nautical miles (5,800 km) and the

sailing time at 15 knots is less than 9 days. At 20 knots, this sailing time would have been reduced to a little over 6 days.

The land transport leg

Potential transport times to/from Narvik are indicated in the map. Some will comment on the transport time indications and say that it is not possible. It is possible when the railways and their governmental and political authorities adapt to market demands. We believe it is possible to do the transport even faster than indicated in the map.

An example: The distance from Narvik to Urumchi is approximately 7,206 km, where 85% (6,120 km) has broad gauge in one section (no reloading). The main part of the broad gauge distance is inside Russia on a well functioning Trans Siberian Railway without border crossings. A nonstop transport in 50 km per hour will take 6 days. By using 24 hours in border crossing procedures and technical stops, it is still possible to reach Urumchi within 7 days. The doubletracked, fully electri-



© Transportutvikling AS, 2004

fied Trans-Siberian route is currently increasing the service speed to 55 km per hour or more. By building up enough volume to run efficient block trains all the way from Northern Finland, the transport time by rail will impress even the most sceptical commentator.

Railway gauges in Norway, Sweden and China is standard gauge (1 435 mm) while the gauges in Finland, Russia and all CIS countries are broad gauge (1 520/ 1 524 mm). When the gauge changes between two countries, reloading or alternative measures are needed (axle change, gauge change devices etc). This does only represent a technical operation and can be performed very efficient by using modern equipment.

■ **The East Asia – North America route** (Vostochny in East Russia)

■ **The Central Asia – North America route** (exemplified by Urumchi in Western China)

■ **The Nordkalotten/Barents routes** (exemplified by Archangel in North West Russia)

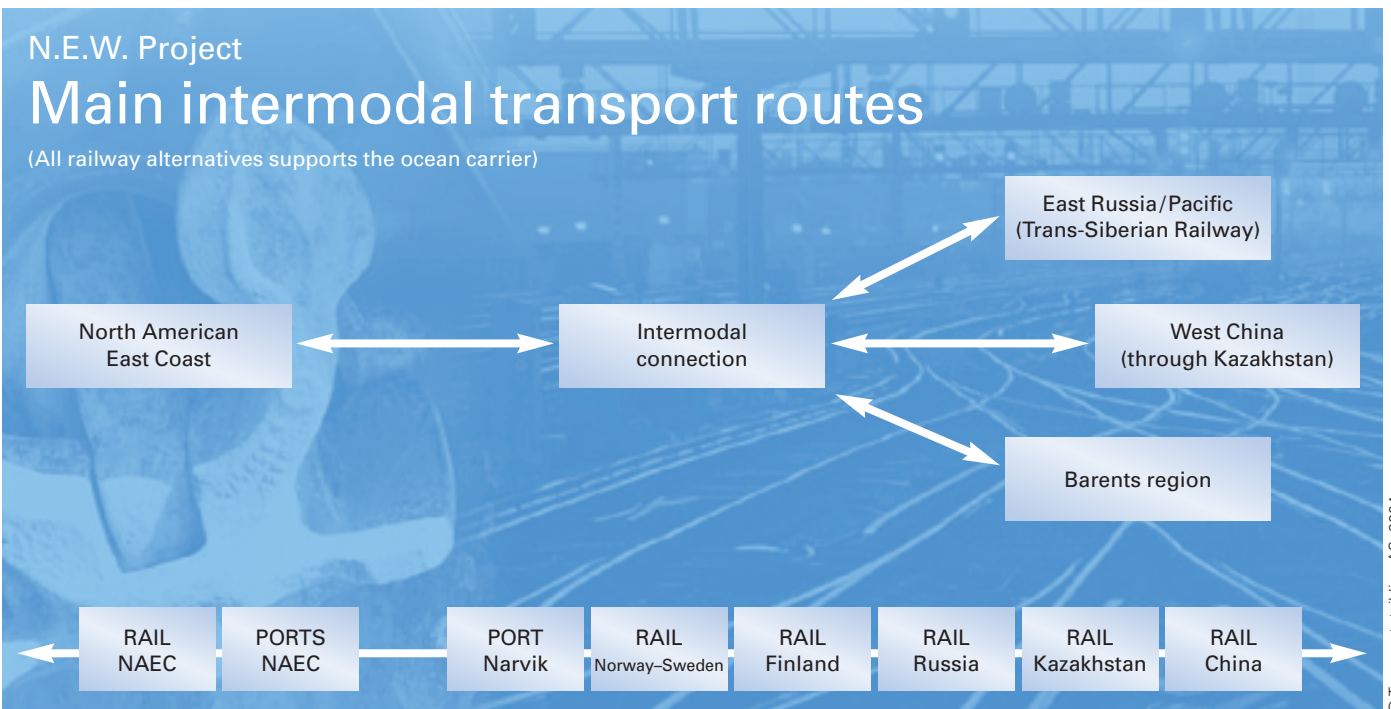
All destinations (Vostochny, Urumchi and Archangel) are chosen for calculation purposes. Several other destinations can be reached. An example is the “Archangel route” where Russian authorities currently are building up the connection (Finland-Archangel). This route can be used for all destinations in Northern Norway, Northern Sweden and Northern Finland.

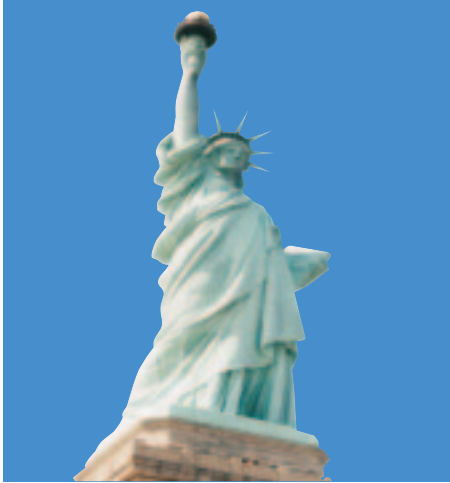
Traditionally the Transsiberian Route to Vostochny/North China has been considered to be in competition with the Western China/Central Asia route through Kazakhstan. In reality they serve different markets in China. China is as large as the Atlantic Ocean and the two routes serve markets where the distance between them are 3-4 000 km. Both routes will support the Transsiberian Railway.

The descriptions below focus on the land section since the ocean leg is common for all alternatives. As a part of all route descriptions a simplified visualization of main competitors of the different routes are made. For some of the routes the competition is strong, while others routes are in favor of the N.E.W. Corridor.

The intermodal routes (sea+railway)

The Atlantic section is common for all routes and we have used Halifax in Canada as the port at NAEC. Halifax is chosen because it is a well-functioning port with on-dock-rail (and for calculation purposes). Normally, more than one port in US/Canada will be included in the sailing schedule. The port of Narvik is common for all alternatives. The three main routes are:





The East Asia – North America route

This route is a transit through the Nordic Countries between Vostochny/Pacific and NAEC and it includes the connection via Zabaikalsk/ Manchuli into Northern China.

The route has its origin/destination in East Asia. The calculations are based on the distance Vostochny, Russia (TSR), Nordic countries, Port of Narvik and ocean transport to North American East Coast.

The entire route involves the following discontinuous points (technical):

- Gauge change between Finland and Sweden
- Intermodal rail/sea operation in Norway (Narvik)

The table on the next page summarizes distance and time for the entire chain based on the projects assumptions. The calculations give an indicative idea of the *current* situation and what the *potential* is by slightly improved organization and continuous operation.

The transport time from Vostochny to North American East Coast is estimated to 22 days, which includes approximately 2-3 days at terminal and border crossings.

We believe there is a potential of 20% reduction in transit time, down to 18 days.

The border crossing in this route does not represent any complications. "Terminal handling" can be avoided



Route: **Pacific (Vostochny) – NAEC (Halifax)**

Distance	Operation	Dist. (km)	Current	Potential
			Transport time (days)	
NAEC port–Narvik	Sea	5 634	9.8	7.5
Port operation Narvik	Port	0	1.0	1.0
Narvik–Tornio	Rail	597	0.6	0.9
Border procedures	Terminal (gauge change)	0	0.3	0.1
Tornio–Vainikkala	Rail	970	1.0	0.8
Border procedures	None or terminal handling	0	1.0	0.3
Vainikkala–Vostochny	Rail	9 869	8.2	7.5
Total/average		17 070	21.9	17.9
Time saving, potential				20%

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at the Finnish/Russian border by building up a block train in Tornio (Northern Finland). This will increase the non-stop operation by approximately 1,000 km. We have anyway used 6-hour (0, 3 days) border time in our “potential” estimate. 0 might be more correct.

A block train from/to Tornio should be

an action of high priority.

N.E.W. will face competition when it comes to the NAEC-Asia trade. The professional shipping lines in the Pacific Ocean do have advantages. When land transport is involved due to origins/destinations in the landlocked areas in East Asia, N.E.W. will be more competitive.

Most competing routes represent longer distances than the N.E.W. alternative.

It might be possible to look at these “competing” routes as co-operators, particularly when container positioning is needed.





route on the distance Western China (Urumchi), via Kazakhstan, Russia, Nordic countries, Port of Narvik and ocean transport to the North American East Coast.

The entire route involves the following discontinuous points (technical):

- Gauge change between China and Kazakhstan
- Gauge change between Finland and Sweden
- Intermodal rail/sea operation in Norway (Narvik)

The Central Asia – North America route

This route is a transit operation through the Nordic Countries between Western China / Central Asia and NAEC.

The route has its origin/destination in the land-locked areas in Central Asia (areas like Western China, Kazakhstan etc), several thousand kilometers away from ocean ports. We have based the

The table on the next page gives an indicative idea of the *current* situation and what we believe is the *potential* by slightly improved organization and continuous operation.

The transport time from Western China to North American East Coast is estimated to less than 24 days, which includes more than 6 days at terminal



Route: **West China (Urumchi) –NAEC (Halifax)**

Distance	Operation/Carrier	Dist. (km)	Current	Potential
			Transport time (days)	
NAEC port–Narvik	Sea	5 634	10	7
Port operation Narvik	Port	0	1	1
Narvik–Tornio	Rail	597	0.6	0.5
Border procedures	Terminal (gauge change)	0	0.3	0.1
Tornio–Vainikkala	Rail	970	1.0	0.8
Border procedures	None or terminal handling	0	1.0	0.3
Vainikkala–Lokot	Rail	4 267	4.4	3.6
Border procedures	None or terminal handling	0	0.0	0.0
Lokot–Druchba	Rail	883	0.9	0.7
Border procedures	Terminal (gauge change)	0	4.0	0.3
Druchba–Urumchi	Rail	489	0.5	0.5
Total/average		12 840	23.5	15.1
Time saving, potential				36%

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and border crossings. It is estimated that more than 60% of the border operation relates to the procedures between China and Kazakhstan. Both Chinese Authorities and authorities in

Kazakhstan are currently working to improve the routines. We believe there is a 35% potential reduction in transit time, down to 15–16 days.

The competing alternatives are almost

the same as for the East Asia route. But, all competing alternatives depend on land transport, – irrespective of transport alternative.





The Nordkalotten/ Barents routes

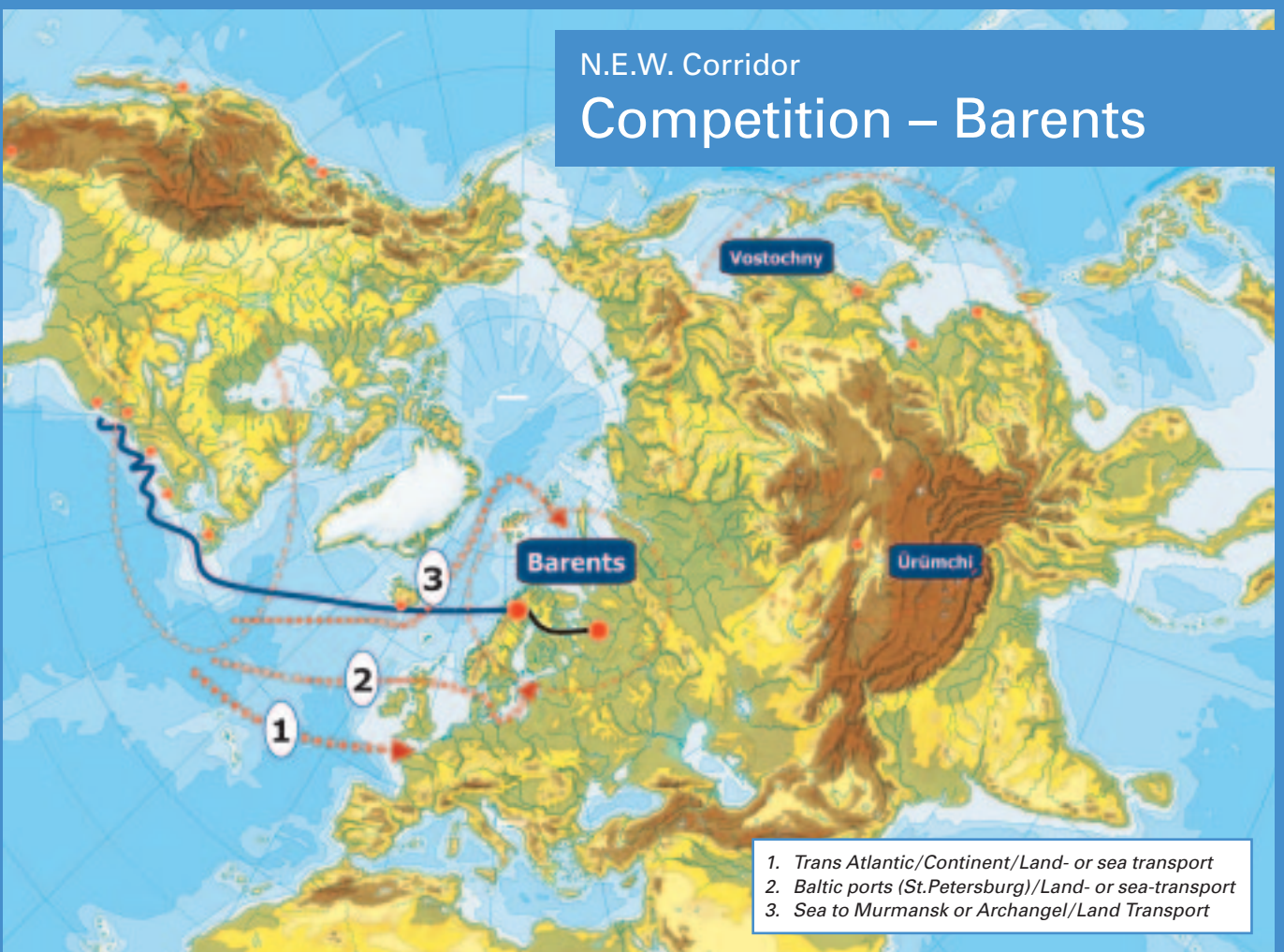
This region is the cradle of the N.E.W. Corridor. The route has its origin/destination in the northern parts of Norway, Sweden, Finland and North-West Russia. The region, except Russia, is called Nordkalotten while the Barents region includes North West Russia. This route focuses on both eastbound (rail) and westbound (rail/sea) demand/supply from/to the Nordic Regions. On the

next page we have calculated the distance between Archangel (NW Russia) via the port of Narvik and ocean transport to North American East Coast. The link from Finland to Archangel was completed in 2003. As per March 2004 a few practical details have to be finalized before daily operation can be organized.

The entire route involves the following discontinuous point (technical):

- Gauge change between Finland and Sweden (no gauge change for Sweden and Norway, only if the market is east of Sweden)
- Intermodal rail/sea operation in Norway (Narvik)

There is a gauge change between Sweden and Finland. A westbound transport from Sweden/Norway will only involve the sea-port as a discontinuous point. An Eastbound transport from Finland does not involve any discontinuous



Route: **Barents (Archangel)–NAEC (Halifax)**

Distance	Operation/Carrier	Dist. (km)	Current	Potential
			Transport time (days)	
NAEC port–Narvik	Sea	5 634	9.8	7.5
Port operation Narvik	Port	0	1.0	1.0
Narvik Tornio	Rail	597	0.6	0.5
Border procedures	Terminal (gauge change)	0	0.3	0.1
Tornio–Oulu	Rail	135	0.1	0.1
Oulu–Vartius	Rail	165	0.2	0.1
Border procedures	None or terminal handling	0	0.5	0.1
Vartius–Archangel	Rail	800	0.8	0.7
Total/average		7 331	13.3	10.0
Time saving, potential				25%

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point provided that the destinations are within Russia or CIS.

The table indicates the *current* situation and what we believe is the *potential* by a slightly improved organization and continuous operation.

The transport time from Tornio to

the North American East Coast is estimated to 11 days. Archangel is estimated to 13–14 days, including 2 days terminal operation. No real border crossing challenges do exist.

We believe there is a minimum 20% potential reduction in transit time, down

to 10–11 days. This route is the original idea of N.E.W. and it can only be matched by more complicated logistical systems including feeder services and costly deviations.



The intermodal link: Port of Narvik

The N.E.W. project aims for synergies between the Barents region and the North America-Asia trade. Based on a market view the most relevant port to obtain such synergies is the port of Narvik. Narvik is also located along the

Northern Maritime Corridor, which will give easy access by rail and north/south sea routes between Europe and North West Russia (Murmansk/ Archangel).

The port is located in a sparsely populated area and a main objective is to develop the port for transit operation between east and west. Narvik is also Norway's largest dry bulk port due to transit operations.

The port is ice-free, sheltered and with no draft restrictions. On-dock rail exist on the container port which gives a straight-line rail connection between the Atlantic Ocean and eastern markets. The cost of terminal operation, port fees and dues are competitive.

The port is located in an area of the world where security challenges are at is lowest, and AON has ranked Norway in its lowest possible risk category on all criteria's (political, economical, terrorism etc)

Logistical challenges do exist and the current infrastructure and organization should be further developed. It is recommended that specific plans are developed, aiming for a more effective logistical chain operation, increased handling and storage capacity.



An even brighter future for the N.E.W. Corridor

Future railway construction projects in North West Russia will have a major impact on the competitiveness of the N.E.W. Corridor for transports between North America and Asia. The shortest distance between the Nordic countries and Central Asia is through Northwest Russia and the Archangel region. The rail distance from Norway to Central Asia could be up to 20% shorter!

In 2003 Russia completed the Ledmozero-Kochkoma link and they reduced the rail distance between the Republic of Karelia, Archangels Oblast and Finland by some 550 km.

Until 2004 there had been 2 missing railway links in the Komi region between Karpogory - Vendinga (215 km) and between Syktyvkar-Perm (579 km).

The two links have to be completed if a straight-line transport to Central Asia is to be a reality. The construction of the link Syktyvkar-Kudymkar -Perm will also provide a non-stop supply of bauxite excavated in the Republic of Komi for the Urals aluminum industry.

Finalization of this Archangel link will establish an interesting future opportunity for east-west transports via the northern regions.

A new route will reduce the total transport distance from the Nordic countries to Central Asia by some 600 km, compared with today's short-

est alternative and approximately 900 km through Moscow. The transport time from Narvik to Urumchi via Archangel will be up to one day shorter than the alternative via St. Petersburg. Variable costs should be reduced accordingly.



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Opportunities and challenges

N.E.W. is a global corridor serving a wide variety of clients and geographical areas. Market players who get early into this corridor concept will benefit by an early penetration into a growing market. However, although great opportunities do exist, action is required in order for these to materialize.

The N.E.W. Corridor represents intermodality in the best meaning of the word, by utilizing environmental friendly modes like railways and low speed sea transport. This corridor also contributes to improve and develop relations between east and west.

Reduced transit time

A developed N.E.W. Corridor represents reduced transport time and cost savings for the cargo owners. By supporting this corridor with volumes, the market players will gain a long term benefit.

Avoiding congestion

There are very large markets along the N.E.W. Corridor. However, N.E.W. also utilizes scarcely populated areas for portions of its global transit, where the rail infrastructure and the ports in the

northern region have available capacity, compared to the congested areas in southern Europe, South East Asia and US. When cargo volumes are growing faster than the present solutions can accommodate, new alternatives with available capacity will be important.

N.E.W. is a concept satisfying most political and commercial objectives regarding congestion. N.E.W. avoids congested areas and “transfers congestion” to regions where additional activity is needed. By this perspective, N.E.W. is a development corridor for the outlying regions.

Low security risk

Global risk assessments displays that the N.E.W. Corridor provides lower risk than most alternatives. The ports to be called at are located in countries where the political climate is stable and the procedures are predictable.

Alternatives and synergies

Customers should also look for alternatives, particularly when volume grows

and world risk may influence traditional routes. Alternatives do also represent better competitive climate and back-up solutions. N.E.W. is a supplement to existing routes, where market players will be given increased flexibility when choosing transport routes.

The N.E.W. Corridor will be a new and a potential main alternative for the industry in the Barents region, where a major part of the existing transport routes represent a considerable deviation.

N.E.W is the only route, which offer synergies between markets in the Barents region (Northern Norway, Gulf of Bothnia, North West Russia) and large markets as North America and Asia.

A huge potential for railway business

The trade between Asia/Central Asia and Europe/US represent a tremendous, and growing, potential for the railways. By only considering the trade between US/Europe and *Western/Central China*, there is a potential business for the railways accounting to USD 500,000,000.

🔍 Opportunities

⚠️ Challenges

Parts of the N.E.W. Corridor are in operation and well-functioning, while some chain-elements have to be improved. New transport alternatives do also faces challenges to prove their viability and to compete with the existing solutions. Even though the N.E.W. Corridor has obvious benefits, it takes time to change the mind of decision makers and political/governmental priorities. Some challenges can be solved through information, while others have to be solved by investments in organization and infrastructure.

It is not up to governmental and politi-

cal organizations alone to tell how the logistics should be organized or which route or port to be used. These decisions will be taken by the market players. Even though sufficient market exists, the volumes in the start-up phase could be insufficient due to lack of commitment from major clients and capacity challenges. Cargo-owners should contribute to the development of the N.E.W. Corridor by supporting volumes in early stages of the development. These contributions will benefit the customers (improves frequency and larger vessels).

When the transport corridor comes

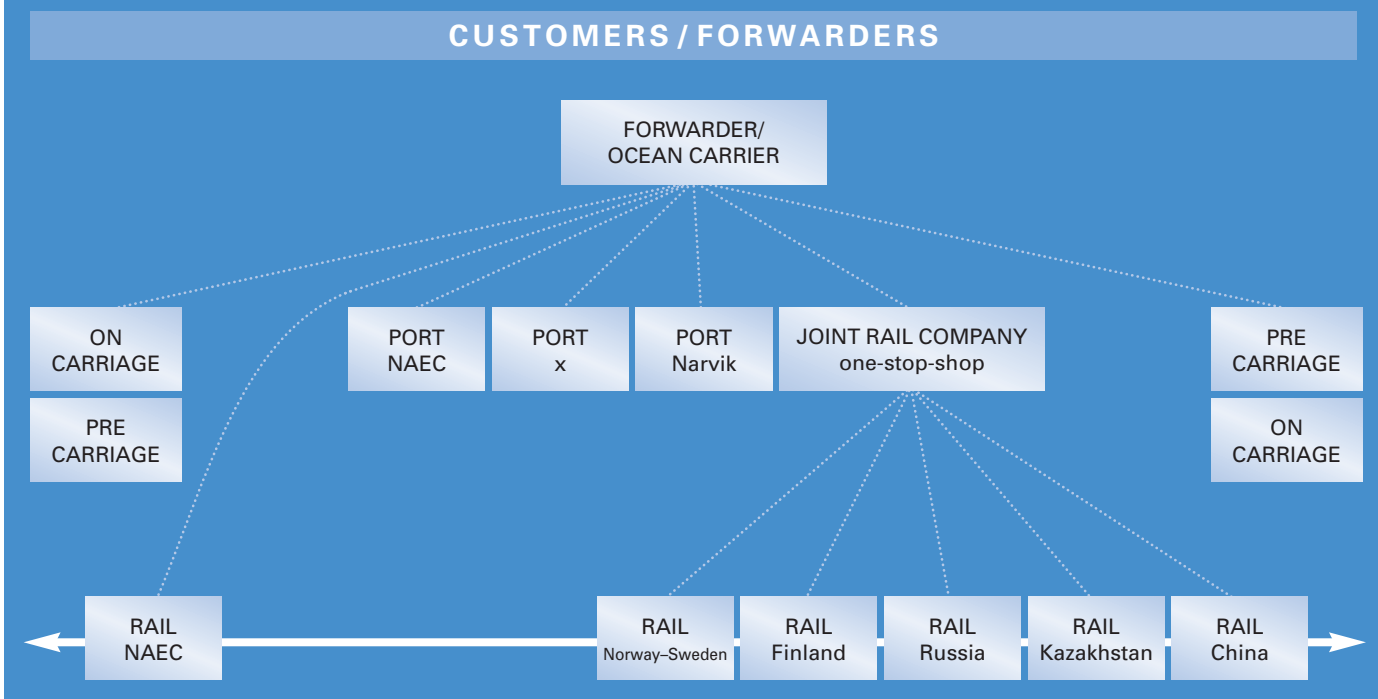
into a large-scale operation the existing port capacity in Narvik has to be developed as well as the railway capacity between Norway and Finland. However, there is available capacity on the railways and further upgradings are on its way.

Compared to sea transport, border crossing rail transport has so far faced more complicated operational procedures. These are not technical problems, but political/administrative challenges that easily can be solved. The N.E.W. Corridor involves countries where political commitment is important.

Organization

N.E.W. project progress – Commercial operation (2005)

Possible organization



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The N.E.W. project aims for a demonstration run where a main objective is to show opportunities and that the challenges are less than many expect. A demonstration run will have a preliminary organization while continuous operation will be organized in accordance with market choice and committed players.

The figure above is a visualization of an organization where the products (transport routes) will be managed by forwarders, NVO's¹⁾ or shipping lines (ocean carriers).

The figure does also indicate an organization of the Eurasian railways into a Joint Rail Company, which would enable co-ordination amongst the railways and the establishment of one single commercial railway product. By such an organization the cargo owners and freight forwarders would only have to make one rate/booking enquiry, instead of one enquiry to each of the up to six separate railway companies (i.e. creating a one-stop-shop).

¹⁾ NVOCC: Non Vessel Operating Common Carrier (Short: NVO)

«The US DOT looks forward to contribute in this project»

Mr. Krohn, Director International Policy,
US Department of Transportation
(June 29, 2003 in Helsinki)

USA

«The CCTST secretariat, the members, railway companies and forwarders are ready to take part in implementing the project of transporting cargo via the N.E.W.-corridor»

Mr. Lukov, Deputy General Secretary, The International Coordination Council on Trans-Siberian Transportation
(June 5, 2002, UIC-CCTST meeting in Moscow)

RUSSIA

During the project period, the Executive Project Office (Transportutvikling AS) and the management Board have been asked several questions. These questions do often involve the challenges as well as the opportunities of the N.E.W. Corridor. Below, the EPO replies on some of these questions.

MARKET

Where are the main markets for the N.E.W. Corridor?

The N.E.W. Corridor is a “multi-route corridor” where the idea is east-west transports through the northern, less congested and political stable parts of Europe. There are large and growing markets within the whole area of the corridor. The challenge is not to find markets/volumes, but to be competitive. Future development will decide, but we believe that the strongest competitive advantages are in the areas NAEC-Barents (1) and NAEC – Central Asia (2).

Barents (1) because the distance is considerably shorter than the alternatives, the transport mainly relies on ocean carriers, and no political challenges and no complicated border crossings are involved.

The Central Asia (2) route is a competitive alternative due to distance and that the region is landlocked (e.g. Kazakhstan and Western China).

What about market opportunities?

It is a rapid growth in the global cargo volumes. Market studies conducted for N.E.W. show large potential cargo volumes. This is also confirmed by commercial players involved in the project. China’s entering into WTO may be one important factor stimulating the N.E.W. Corridor. Another stimulating factor is the increasing problem of global congestion. N.E.W. is also an excellent alternative as it is possible to establish market synergies between the North American East Coast – Central Asia route and the industry in the Barents area.

Cargo owners of time-sensitive cargo will benefit by using the N.E.W. Corridor.

LOGISTICS

Why enter Western China through Kazakhstan?

It is the shortest distance, and distance does have a significant impact on variable costs. Western China is a growing region in China, and Chinese authorities have strong focus on development in this region. Western China is also a landlocked area. Imports/exports have to be transported long distances to the nearest seaport on the Pacific Ocean. However, the fastest/shortest way to this region to/from Europe/NAEC is through Kazakhstan and the border crossings in Druchba (Dostyk) – Alashenkou.

There are still challenges to overcome and the N.E.W. Corridor aims to focus on these challenges and participate in the development of a future corridor concept with strong commercial viability.

Will the Western China – Kazakhstan route reduce the importance of TSR?

We have heard this statement a few times. It is based on lack of market experience, over-politicization, and an academic view launched several years ago. China is an extremely large country both measured in area (about the size of the Atlantic Ocean) and in population (approx. 1.4 billion) and over the last, several years China’s trade has developed exponentially. The TSR serve a different market and there are volumes enough for both routes. TSR is 10,000 km and the large market in Northern China can be served through Zabaikalsk/Manchuli or Vostochny. Western China will be served through Kazakhstan. In the future, nobody will accept to deviate 3–5,000 km from Western China into TSR in Zabaikalsk to utilize a route to Europe which is 4-5,000 km longer than the alternative.

Fighting TSR from Zabaikalsk for the West China market is a losing game, while developing both routes are a winning game for TSR, -and even more important to customers of TSR.

By using Kazakhstan for Western China, TSR will gain volume for 50% of the TSR route, instead of transferring 100% of the volumes to the most relevant alternative, which is sea transport from the nearest port in China.

Is it true that transport through the N.E.W. Corridor is faster than the alternatives?

Yes and no, because it depends on the origins, as well as the destinations, and several other logistical variables. N.E.W. is definitely an opportunity for faster transport than many alternatives because distance is shorter and most border crossings are easy. Particularly for the land-locked areas, there will be potential time savings.

There are still challenges to overcome. A few border crossings are challenges, but currently there is only one border crossing in N.E.W. where there are unsolved challenges. It is on the border between Kazakhstan and China. We are sure that this border does not represent a permanent obstacle. China and Kazakhstan are some of the strongest supporters of the N.E.W. Corridor, and they have taken both political and commercial steps to improve the existing conditions.

There are also challenges connected to the intermodal operation at the port of Narvik, which may cause delay. This is a question of capacity, and can be solved by investments and improved organization.

We do also believe that this process will go faster when volumes increases

and the market players are convinced that security challenges are solved. We would also like to mention that frequency is a variable to consider when it comes to transport time (see next question).

What is the problem with frequency?

Frequency depends on volumes, cargo balance etc. Frequency does have impact on transport time if you lose your connecting mode in an intermodal chain. In the start-up phase, we do not believe volumes will be sufficient to establish the best frequencies. Delivery time has to be transparent to compensate for lack of flexibility. When volume grows, more flexibility and higher frequency will come.

Is it cheaper to use N.E.W., or is it only time savings?

The freight rates within the N.E.W. Corridor depend on several variables. However, while the N.E.W. Corridor will not have the lowest price for all origin – destination combinations, our research indicates that it is possible to obtain competitive, or even cheaper, freight rates for most regions along the N.E.W. Corridor when a full-scale operation starts and particularly when competition becomes effective.

Furthermore, one should remember that there is a cost related to time consumption, meaning that reduced transit time has an impact on the total price. There are many customers who are willing to pay a higher rate because of reduced transport time.

We have heard that the documentation procedure for the railways is an obstacle. Is it?

Improvements are required. When you order a sea transport you may be offered a through ocean bill of lading, covering inland transportation as well. Even though through documents exist, the railways do not generally operate with one single document and in accordance with the demands of the market. However, it is being worked at implementing through documentation.

Why does the project focus on the port of Narvik as it represents a deviation and does not have the necessary capacity?

Narvik does not represent a deviation when it comes to East-West transports of the N.E.W. Corridor. A distance table will tell, if not a traditional map.

The container terminal of Narvik currently has the necessary capacity to handle a smaller scaled operation. The terminal and capacity on connecting modes have to be developed in order to handle a future, larger scale operation. However, this is a matter of investments, not a constant impediment.

The Port of Narvik has no draft restrictions, is ice-free and by developing good plans, professional logistics and organization, Narvik is a good choice for the future N.E.W. Corridor. Of course, there are competitors, and the market players will look for the intermodal link, which is most competitive.

Why is Archangel–Perm important?

The connection Narvik–Moscow–Perm is almost 3,900 km. Archangel–Perm will shorten the distance to Mid Russia, Central Asia and Asia through the N.E.W. Corridor by up to 900 km.

Nobody thought that the Russians would build the Ledmozero–Kochkoma connection between Archangel and Finland, but they did.

Why is there a need for jointly organized rail transport?

The customer needs easy access to the product and a customer will not accept that too many players are involved in the discussions and in the transport of one single container. It is too complicated and it “involves too many phone calls” (Mitsui).

By implementing a more cooperative organization, the railways will get easier access to a wider market and they will reduce the needs for intermediaries.

How much time will be lost with the gauge changes?

This is not so much a technical problem as a political problem. A change that should take only 2-4 hours, may take much longer time due to time-consuming procedures.

Has the US port receiving the goods from the trial been selected yet?

No, but it is most likely not any port(s) further south than Newport News.

Border crossing by rail is complicated. What about the N.E.W. Corridor?

The N.E.W. Corridor is less complicated than most alternative routes, and technically there are no major obstacles.

SECURITY

Is the N.E.W. Corridor safe?

The N.E.W. Corridor is under development. However, yes, the main routes are safe compared to alternative corridors under development. According to information obtained from AON, most countries within the corridor are considered safe when it comes to politics, economics and terrorism.

The Nordic countries are among the safest countries in the world and Russia has not seen any major security problems along the N.E.W. route (i.e. TSR section) for numerous years. China is considered as medium low risk and Kazakhstan has established the same security standard as Russia when it comes to transport by rail.

US Department of State has commented that there is a higher risk connected to containers that are left standing during border crossings and gauge changes, and they have recommended

that the manufacturers consider CT-PAT. That is one of reasons why the N.E.W. project particularly focuses on effective border crossings.

What about tracing of containers?

It is possible for most of the corridor. TSR has operated with reliable ETD's and ETA's and major customers do not consider it necessary to pay for tracing. However, if you like to, it is possible.

Tracing is important, and particularly in a route under development. The project team has taken initiative, and US authorities have made concrete proposals regarding this issue, including equipment for the trial.

Have any risk- and vulnerability assessments been conducted yet?

No, we are looking for collaboration. The point was made that although the project is called NEW, most of the transportation systems already exist. It should not be mistaken for a completely new route.

MISCELLANEOUS

Is the N.E.W. Corridor a tool for reduced congestion?

EU states (EU Transport Policy 2010: Time to Decide) that congestion "is now beginning to threaten economic competitiveness" and that "there is a serious risk that Europe will lose economic competitiveness". Congestion is also a serious problem outside Europe.

At the present stage and in the early life of N.E.W., the corridor will not have any major impact on congestion. However, it will be an alternative in a growing and congested market. It will reduce some pressure on congested areas. We do not think that congestion will be reduced in these areas because trans-

port volumes are growing fast. The impact will perhaps be that N.E.W. alleviates some of the global congestion.

It is also important to know that N.E.W. is based on less congested ports (and areas) than most alternative routes.

Why has UIC taken interest in the N.E.W. Corridor?

UIC is a global organization and has taken strong interest in the development of the N.E.W. Corridor. UIC consider N.E.W. as one of their leading projects and a model for other corridors throughout the world. N.E.W. is a link between the largest and fastest growing production- and consumer markets of the world and it utilizes the world's longest railway distances.

Why is N.E.W. considered a "development corridor"?

N.E.W. passes through regions of the world where current transport solutions need to be improved and developed. Well functioning transport solutions are critical for business development and the flow of goods (and people) generates benefits for the industry.

Is N.E.W. good for the environment?

Yes. N.E.W. utilizes environmental friendly modes like low speed/high capacity ships and the railway. N.E.W. is a true inter-modal solution, with obvious environmental benefits.

Is it cheaper to increase transport capacity in N.E.W. than alternative corridors?

"Cheap" is a word that should be related to something. It is generally less expensive to increase global transport capacity in outlying areas where congestion is not a problem and where you do not have to move people and infrastructure.

The marginal cost by investing one dollar in a capacity increase in the outlying regions will yield a higher long-

term return than making the same investment in regions where space pressure and congestion is a problem. This statement is based on several assumptions, e.g. that the outlying regions have a market relevant location etc.

One of the arguments is that N.E.W. is a back-up corridor. What is a back-up corridor?

The N.E.W. Corridor is a main transport alternative for some markets, while it for other markets it is only an alternative route. This applies to all corridors. Alternatives generate flexibility and reduce risks. When the priority 1-route fails, the operators need back-up solutions to serve their customers.

A good example is the closure of 29 US West Coast ports due to a labor dispute that had a severe impact on US and Asian economies. This closure clearly displayed need for supplemental/alternative transportation routes. Strikes, threats of terrorism and unforeseen nature conditions generate the same need.

However, a back-up corridor has to be in operation to be an alternative. If customers do not use the back-up corridor, the corridor will not be an alternative due to economical and organizational reasons.

What are the main arguments for the N.E.W. Corridor?

Important variables like price and transport time depends on the location of the clients and future logistical organization. For most markets, we believe in reduction in costs and transit-time. N.E.W. does also utilize existing infrastructure and environmental friendly modes. Growth in global trade and congestion do require new transportation solutions and alternatives.

N.E.W. will also improve current transport solutions, particularly east-west for the Barents region and the land locked areas in Central Asia.

Since N.E.W. is considered a global trading route, other arguments may arise when the final routes are chosen.

