Drivers for Arctic shipping

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Arctic shipping is many different activities
Shipping types

Transit

Destination
- Oil and gas
- Minerals
- Tourism

Internal
- Fishing
- Offshore activities
- Other

Types of drivers

Economic

Political/legal

Technological

Demographic / social

Natural
- Sea ice+
- Resource abundance
Drivers affect **DEMAND** and **SUPPLY** of transport services

Some drivers **enable** or **prohibit** an activity

Some drivers affect the **level** of activity

Lack of historical traffic data a challenge for analysing Arctic shipping
Focus here:

• Northern Sea Route / North-East passage

• Russian icebreakers/infrastructure, tariff regime.

• **Insurance** and role of insurance companies.

• **Mining** in Russia. Russian **transport policies**.
NSR and NEP
Ice breakers are essential for Arctic shipping
Financing them is a challenge and source of conflict inside Russia
Fear of “ice pause”? 

New icebreaker 3
New icebreaker 2
New icebreaker 1
50 let Pobedy*
Yamal*
Sovietskiy Soyuz
Vaygach*
Taymyr*
Rossiya
Arktika
Sibir
Lenin
Russian icebreakers

• **Currently in operation**
  – Four nuclear 35-54 MW
  – Six diesel-electric 9-23 MW

• **Under construction**
  – One nuclear: *Arktika* 60 MW
    (1.2 Billion US$)
  – Four diesel-electric 18-25 MW

• **Contracted**
  – Two more nuclear 60 MW

• **Designed**
  – Nuclear ice-breaker *Lidar* 120 MW
Financing new nuclear ice breakers has been a tug-of-war between Atomflot, Ministry of Transport, companies, Ministry of Finance and the Baltic shipyard.

Still uncertainty over full financing and time of completion of new nuclear ice breakers, but also unlikely with «ice pause» in the next few years due to limited traffic.
Operational income of icebreakers?

- **Transit fees** now negotiable, but **non-transparent and unpredictable**
- Rosatomflot and NSRA income from transit sailings is small
- Supporting Yamal LNG, Navy + other cruises more important

- **Strong position for Atomflot**
  - Experience and competence
  - **But also monopolist and special interests**

- **Conflict of interest** regarding allowing un-assisted sailings with ice-class carriers or Atomflot «always» assisting
  - Current income vs scaring potential users away from the NSR
Arctic shipping remains a distant dream for now, transport minister says

“…insurance companies.. are the ones really calling the shots…”

Canada Transport Minister
Lisa Raitt,

http://www.ctvnews.ca/, 25/3-14
P&I Arctic shipping insurance

- **Insurance is available**, and insurers that are presently not insuring NSR-going vessels are awaiting increased traffic.
- Insurers are specifically **concerned about reduced icebreaker assistance**.
- Most active insurers also **communicate with Russian authorities**, including **on safety issues**.
Mining:
390 mines and mining projects mapped
Figure 15 – Russian prognostic copper resources ($P_1$, thousand tons) based on estimate of known deposits, 2012. Source: MNRE
Considered...

- **Russian federal strategy documents…**
  - the *Arctic* strategy,
  - the *Energy* strategy,
  - Strategies for the *metallurgical industry*,
  - the *Port*, *Railroad* and *Transport* strategies.

+ **Mining companies’ strategies**

Wikimedia commons.
Main Arctic ports

Baltic Sea

TransSiberian Railway

Black Sea

Caspian Sea

Main Far Eastern ports

~ 8330 kilometers

Area – 17 mln. sq.km
Plans to extend railroad to Norilsk

Figure 41 – The maximum option of Russia's plans for new railroads by 2030 and further. Source: Russian Railways (RZD)
Mineral industry as a driver for destination shipping on NSR?

- Most factors point towards less use of NSR for mining products
  - Low or falling world market prices, as well as uncertainty
  - Few plans to develop resources in Rus Arctic (Novaja Zemlja, Taymyr)
  - No mention of NSR in mining companies’ strategies/plans
  - Major reserves and mines further south, where there is also existing transport infrastructure
  - Russian federal plans and strategies no focus on NSR for this
  - Railroad strategy 2020-2030 want to expand railroads further north, and reduces likelihood of use of NSR.
  - Today’s major mining use of NSR – Norilsk Nickel – could shift to railroad
  - Yamal LNG will be major use of NSR in the coming years
Further work..

Transit shipping only small share of Arctic shipping, but data on destination and internal shipping has been limited.

Transit routes between Europe and Asia:
- Northern Sea Route (blue)
- Suez canal (red).

Source: Wikimedia commons.
Data on actual shipping now available from satellite-based AIS-data

Sailed distance by area/ passing lines / port calls / 13 ship types / 7 sizes

http://havbase.no/havbase_arktis
Havbase LMEs (Large Marine Ecosystems)
Distance sailed nm, by month and year

- Increased traffic by year
- Clear seasonal pattern

Data from Havbase.
Diagram by Norut & Capia.
Sailed distance nm by LME

NB! Scale on axes!
Sailed distance by ship type

All ship sizes

Ships > 10 000 GT
Data for further work…?

• **Quantitative** and **qualitative**

  • AIS based shipping data (Havbase) 2012-
  • Exports from Russian regions by product 2012-
  • Minerals and petroleum – deposits and activities and exports
  • Icebreaker capacity + NSR policies + federal policies
  • World market prices of raw materials
  • Transport policies in Russia (+Energy +Arctic)
  • *Cost structure of shipping?*
  • *Sea ice and climate?*
  • *Fisheries /ecology?*
Many drivers and factors matter.
Strong trends, likely drivers, wildcards...

We continue to assess quantitative and qualitative data in ongoing projects...

Thanks to partners, financing institutions, other collaborators, informants, the organisers and you for listening!

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- Renewable Energy
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