Geopolitical outlooks in the Arctic

A comprehensive overview of the new opportunities, challenges and dilemmas that are reshaping the northern frontier of the world

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1. Introduction

The Arctic, an extremely unspoiled area that was previously considered untouchable and distinct from traditional international political scenarios, is undergoing an extraordinary transition. The situation has altered drastically since 1987, when the Soviet Union president Gorbachev addressed the world with the following words: “Let the North of the globe, the Arctic, become a zone of peace. Let the North Pole be a pole of peace.”

Despite the Arctic's year round cold temperatures, warming has occurred at a rate three times faster than the rest of the world over the last 49 years, causing rapid and widespread changes in sea ice, land ice (glaciers and ice sheets), permafrost, and other physical elements and characteristics of the Arctic. These profound changes are reshaping the region, with significant implications that go a long way from being only environmental. The melting of much of the ice cover once impenetrable is, together with a calamity, opening up new economic opportunities that many countries are eager to exploit. To name a few, invaluable deposits of natural gas and oil have been uncovered, fish banks are adjusting to warmer streams, while the diminishing thick ice could serve the world with alternative shipping routes.

Precisely these growing interests in the region, which Gorbachev already foreshadowed, are transforming the Arctic, from a periphery of the globe to a new center of geopolitical confrontation. The establishment of the Arctic Council in 1996 well represents how the focus of nations has been turning north since the end of the last century. Although the institution was intended to foster cooperation and collaboration among the states that directly faced the Arctic Ocean, it soon became clear how also other major players, situated at major distances from the ices, were anxious to make their voices heard.

Moreover, if in the equation are factored in other recent developments of the geopolitical scenario, the Arctic region might see its relevance flourish yet again. The never ending confrontation between east and west, involving the emerging power of China, often aligned with Russia, against a weakened hegemony of the United States and its European allies is set to include the Artic as an unconventional realm of power to secure. Tensions along the main shipping routes encompassing canals with obsolete infrastructures, local conflicts as well as piracy risk, are nonetheless setting new goals, such as testing the viability of the Northern Sea Route, the fastest way to reach Asia from northern Europe.

2. Topic analysis

2.1 The Arctic environment and the impact of climate change

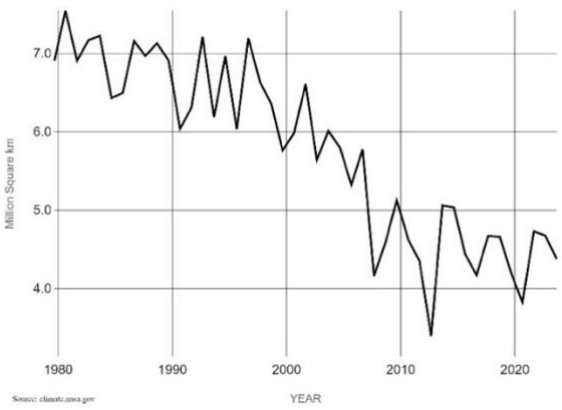
As the earth is tilted on its axis relative to the sun, its poles receive less solar radiation than the rest of the planet, especially in winter. The climate is therefore cold with temperatures well below 0°C around the Arctic being covered by snow and sea ice most of the year. However, the consequences of global warming are particularly visible in the polar regions, and particularly in Arctic with several effect accelerating climate change. Indeed, over the last 50 years, the Arctic has likely warmed at more than twice the global rate according to the IPCC and it is almost certain that the warming will continue and even be more pronounced. Furthermore, two peculiar natural phenomena are augmenting, or rather worsening the situation.

The *Albedo effect* is a phenomenon characterising the potential of a surface to reflect sunlight. The lighter the colour of a surface, the largest the part of reflected sunrays back to the atmosphere and the highest the albedo. On the contrary, the darker the surfaces, the lowest the albedo with more sunrays and energy absorbed by the surface. Ice and snow are very light-coloured surfaces and therefore have a very high albedo. When ice and snow melts, darker surfaces appear (oceans or soils), the albedo decreases, and more sunrays are absorbed leading to a higher uptake of energy and a warming[1].

The second phenomenon is actually more an intrinsic feature of permafrost, the layer of soil, rock or sediment that has been frozen for at least two years. It is mostly located in the northern hemisphere where it covers about 15% of the land area[2]. It is a major carbon sink as it stores 1700 billion metric tonnes of carbon along the Arctic Circle. This is mostly carbon-based remains of vegetation and animals that froze before being decomposed[3]. It is also thawing rapidly due to the increase of temperatures and causes the release of greenhouse gases like methane and carbon dioxide, which are further exacerbating climate change. The Arctic Monitoring and Assessment Programme (AMAP) estimates that permafrost contains almost twice as much carbon as the Earth's atmosphere. Those two natural effects are self-reinforcing, or positive feedback loops, severely affecting the Arctic with the unprecedented result of steadily making sea ice disappear.

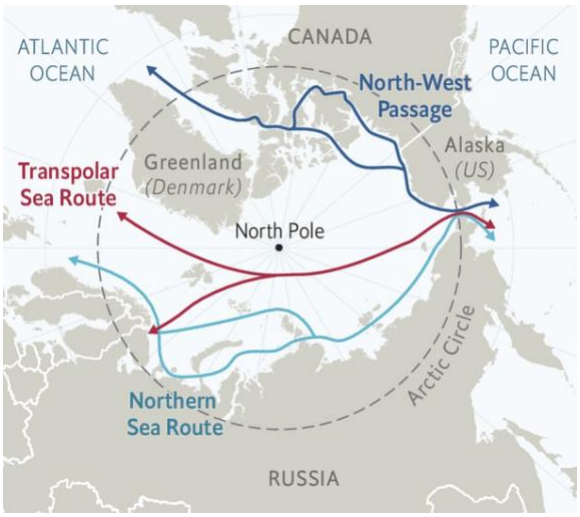
[1] https://www.npolar.no/en/fact/albedo/
[2] https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021JF006123
[3] https://www.esa.int/Applications/Observing_the_Earth/FutureEO/Permafrost_thaw_it_s_complicated

According to the National Snow and Ice Data Centre (NSIDC), the minimum extent of Arctic Sea ice in September, when it reaches its lowest point each year, has decreased by about 13.2% per decade since satellite records began in 1979. In 2023 its alarming minimum was reached on September 19th, reaching 4.23 million square kilometres (6th lowest measure recorded). A clear and decline in the minimum sea ice extent can be observed with an all-time low reached in 2012 with 3.39 million square kilometres. [4] The Sea ice cover is projected by the Intergovernmental Panel on Climate Change (6th assessment report) under all scenarios to reach ice-free Arctic with sea ice extent under one million km^2 at its summer minimum around September at least once before 2050. [5]



2.2 Consequences for the shipping industry

The melting of Arctic Sea ice is making the northern regions increasingly navigable during the summer months, especially along the three main Arctic routes, connecting the Atlantic Ocean to the Pacific Ocean: The Northern Sea Route (Northeast Passage), the Northwest Passage (which is hard to navigate due to multiple islands), and finally the Transpolar Sea Route (to this day navigable only with heavy icebreakers but expected to be a viable option in the future).

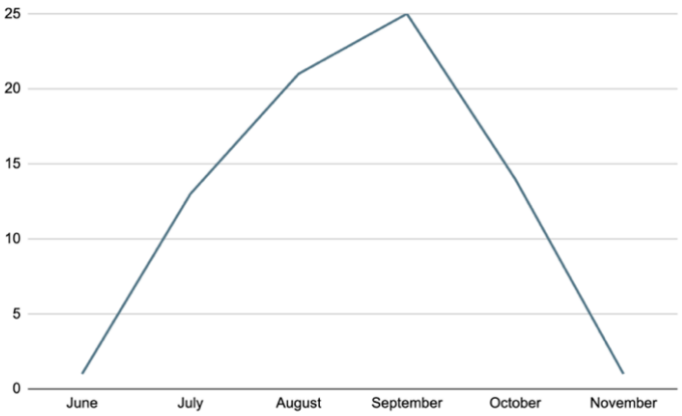


The fastest, with less thick ice, and most equipped (due to old USSR infrastructures), the Northern Sea Route, starts in Murmansk and does not include the Barents Sea therefore not reaching the Atlantic Ocean. It ends at the Bering Strait and is estimating to have distance around 2.500 miles along the Russian coast, encompassing a complete transit in Russia EEZ (Exclusive Economic Zone). [6]

[4] https://svs.gsfc.nasa.gov/5162/#:~:text=An%20analysis%20of%20satellite%20data,(4.23%20million%20square%20kilometers).
[5] https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Polar_regions.pdf
[6] https://www.thearcticinstitute.org/future-northern-sea-route-golden-waterway-niche/

2.2.1 Comparison with current shipping routes

The NSR is measured to be approximately 40% shorter than the current and main route passing through the Suez Canal[7]. Indeed, to reach Yokohama (Japan) from Rotterdam (Netherlands), it takes around 12.000 km with the NSR against the 20.740 km of the traditional travel. A cargo ship sailing from Murmansk could be able, given certain atmospheric conditions, to cut seven days off the journey.[8] Shorter distances result in reduced fuel consumption, lower operational costs (crew), decreased insurance premiums and also enable to increase the rotation rate of ships which increases revenues. According to a study by the Arctic Institute, shipping through the NSR can reduce transit costs by up to 50% for voyages between Europe and Asia. A study by COSCO (*China Ocean Shipping* Company) shows a total reduction of 220 days in transportation time and 6.948 tons of fuel, summing up to $9.36 million saved across 14 voyages.



Obviously, the perfect solution does not exist. Although travel distances and times are reduced for the NSR, that happens exclusively along the summer months (with current weather and temperatures). Navigation, due to Arctic ice, is only possible during a five-months window, shrinking to seven or eight weeks for non-ice class vessels as shown in the picture (transits by month).

Shaving nautical miles however does not seem the only reason for which the NSR could be a viable and valid alternative. The Suez Canal was crossed by more than 22.000 ships in 2022[9] and with a global fleet in relentless expansion the number could be assumed to increase even more in the future. As the canal remains of modest dimensions, approximately 24 meters deep and 205 wide, the risk of creating bottlenecks in which vessels might have to slow down to avoid incidents is not negligible. In March 2021 for instance, cargo *Ever Given* blocked the canal for six days, resulting in 369 ships queuing[10] and US$9,6 billion worth of trade on the line. Along the same route, the Malacca Strait is also under considerable pressure.

[7] https://www.sciencedirect.com/science/article/pii/S096669231100024X
[8] https://www.thearcticinstitute.org/future-northern-sea-route-golden-waterway-niche/
[9] https://www.statista.com/statistics/1252568/number-of-transits-in-the-suez-cana-annually/
[10] https://www.bbc.com/news/business-56559073

Recent developments are moreover causing a rethinking of the main routes. The risk of piracy along the coast of Africa, as well attacks of the Huthi rebels to cargos in the southern portion of the Red Sea are forcing six of the ten major shipping companies to travel around the Cape of Good Hope, avoiding the Suez Canal and adding mileage, insurance costs and overall diseconomies.

2.3 Current regulations

Despite the numerous eyes turning north and surging economic interests, to this day firm supranational regulations are still weak. With the end of the cold war and the subsequent demilitarisation of the high latitudes, the Artic was set out to be a neutral zone of cooperation, with the maritime laws, particularly those of the *United Nations Convention on the Law of the Seas* (UNCLOS),[11] to be the only applicable legislation.

In 1996 the collaboration among nations was enhanced with the institution of the *Artic Council*[12] where five Artic coastal states (US, Canada, Russia, Greenland and Norway) plus Iceland, Finland and Sweden could discuss and facilitate cooperation trough a consensus-based decision-making model.

But since then, the geopolitical picture of the world has radically changed. The soft and vaguely pale colours of the *Pax Americana* now appear dangerously vivid. New superpowers are looking at the Artic with eyes full of desire, given the embedded resources, commercial possibilities and strategic locations. In such time of need the Artic Council has furthermore halted its activity due to the Russian invasion of Ukraine.

It is in this precise moment that lack of regulations could give rise to serious tensions. The UNCLOS as a matter of fact, clearly defines territorial waters, an exclusive economic zone, but also an additional, and potentially claimable, 150 nautical miles, thus creating overlaps among competing states.

[11] https://www.un.org/Depts/los/
[12] https://arctic-council.org

2.4 Geopolitical implications

As mentioned, large part of the international concerns gravitates towards the Northern Sea Route (NSR) that could open up enormous economic opportunities, while attracting an increasing number of players, some of them surprisingly far from the region. China implemented an "Artic Policy" since 2010, [13] later claiming the status of "quasi–Artic State". Large investment in the new route have been made, constantly trading with Russia and securing a corridor for the much-needed energy imports (see the 2010 China National Petroleum Corporation – Sovcomflot deal). But China is not the only one. Classified reports emerged signalling a possible agreement between Russia and India to accustom Indian seamen to the working conditions of the NSR.

Many are certain that scientific research helps legitimise claims of countries geographically distant from the region to participate in Artic decision-making. These perhaps more political than scientific missions are being organised by Germany and China with the same intent, pushing for the international community and the Artic States to recognise the Artic Circle as common heritage of mankind, *de facto* preventing the establishment of exclusive rights. A research centre or an Artic base is a step closer to legitimise ship traffic.[14] The same goes for granting support to countries that already have a geographical advantage, such as Iceland and Scandinavia.

Moreover, the European Union is strongly advocating for the right of innocent passage (UNCLOS Art. 19), that implies free navigation in territorial waters for purposes that are "not prejudicial to the peace, good order or security of the coastal state". But the former Soviet Union does not see it that way. The Artic is therefore quickly escalating into a new hub of geopolitical confrontation. The Northern Sea Route is particularly concerning for the west due to its vicinity to the Russian coasts.

Russia already claims that the whole transit happens in territorial waters and the state exclusive economic zone. Infrastructures and ports, facilities to repair and refuel container ship are Russian, and so is the power of eventually or possibly imposing fees and tariffs to foreign vessels.

Russia is clearly not passing on the opportunity that has surfaced. The government "Artic Policy", firstly established during the late cold war, is mobilising vast resources and investments to develop the Nordic coastal region. Extraction sites are being built, refineries and ports, as well as an

[13] https://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm
[14] https://www.jstor.org/stable/41428544

additional fifty vessels with Artic navigation capabilities.[15] In 2019 $41 billion of tax incentives over the next thirty years were announced for energy company *Rosneft* to implement a massive new oil field. In 2020 $300 billion were allocated to overall Artic infrastructure. The public expenditures are enormous, and so are the expected costs for the environment.

3. Advice

Wider use of the NSR will be a major market disruption bringing new possibilities for all competing actors. European shipping companies should closely observe its development and be ready to jump in to secure new transport contracts, for instance with the Chinese, being the biggest and obvious target destination on the other side of the route. Demand for new logistics services is also on the rise. NSR will bring changes to the shipbuilding industry, which operates on different levels and time frames than the shipping services. Going above the Arctic Circle implies a need for a new class of ships, necessarily owning a Polar Code and passing Russian administrative requirements.

South Korea has already become one of NSR's biggest stakeholders by supplying the new Russian Arctic fleet that will work on expanding local Siberian infrastructure and commercial shipping lanes.[16] The same opportunity lies with the European shipbuilding industry, already experiencing market disruption after COVID-19, foreign investments in local ports and shipyards and an increased competition. Additionally, common usage of NSR as maritime trade route might change the market outlook in terms of new shipping companies, including unforeseen competitors.

3.1 Due diligence

A duty of every good freight operator is to monitor current geopolitical situation. The time of corporate indifference to shifts of power in the global arena is over and Arctic might be used as a perfect example. Global maritime trade is a unique industry as it's strictly intertwined with both geographical conditions and political inclinations of international relations. For this reason, shipping giants must undertake their thorough geopolitical due diligence.

[15] https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/112923-russias-arctic-oil-exports-surge-but-risks-still-hamper-new-trade-route
[16] https://maritime-executive.com/article/south-korea-explores-container-shipping-on-russia-s-north-sea-route

Firstly, the most recent factor affecting shipping above the Arctic Circle is the aftermath of the invasion of Ukraine. European observers should focus not only on the effects of the war itself, but also on current and possible future sanction negotiations. As a consequence of the conflict, the EU, among other interventions, imposed sanctions, put on hold the "most favored nation" trade reciprocity rule and almost entirely halted direct consumption of Russian gas and oil. The EU banned crude imports on December 5th, 2022, and has sought to make it more difficult to conduct ship-to-ship transfers of oil off its shores. In 2020 the LNG and crude oil transport accounted for 73% total cargo volume transiting the NSR.[17] Tangible peace-talks and waived sanctions could constitute signs that further investments along the route are to be implemented, but until then, premature cooperation with Russia could only result in legal repercussions and political scandals.

Secondly, European shipping companies should monitor the state of the Russian-Chinese cooperation in the regard of the NSR. China is deemed to be the biggest stakeholder in the NSR development, both in terms of commercial passage and investments. The Chinese are building their own infrastructures along Russian arctic ports: Murmansk, Sabetta, Arkhangelsk, Tiksi, and Uzden are being provided with Chinese rails and support installations for their transports (i.e. From Huawei).[18] Since 2018 China has called itself a "quasi-Arctic state*",* setting up plans for a new *Polar Silk-Road.* The perseverance of Chinese funds deployment in the region may serve as an indicator for the ever-changing state of this peculiar partnership between two global powers, as well as a sign of the timing with which the Arctic terrain will host further operations.

Finally, firms eager to exploit the NSR must oversee discussions regarding the interpretation of UNCLOS. Recent events show that Russia is not willing to back down from using NSR as a political and economical weapon to serve as leverage on the international community. China on the other hand sees the Arctic as a possible solution to tensions in the South China Sea and to the Malacca dilemma. For this reason, as mentioned before together with Europe and the US, China advocates for the right of innocent passage. European shipping companies too, alongside their governments, should use all formal and informal means to inspect arising opportunities and to prevent other countries from establishing monopoly on what could become crucial in the near future.

[17] https://www.sciencedirect.com/science/article/pii/S1361920923001281#b0440
[18] https://www.highnorthnews.com/en/putin-and-xi-discuss-further-deepening-arctic-partnership#:~:text=Over%20the%20past%20decade%20China,a%20third%20to%20%24190bn

With this being said, even if the geopolitical situation will impede full usage of NSR in the upcoming years, the ice cover withdrawing and climate change will happen regardless. The European carriers should not sit idly but rather prepare to fully embrace this market change. This could entail obtaining as much information on navigating in the north as possible, preparing experienced crews and specialistic tools for ice-class ships. Keeping up to date with necessary know-how through collaboration with already existing Baltic or Northern Sea crews, market penetration with joint-ventures or acquisitions of specialized companies might be a huge asset lowering entry barriers in whatever awaits.

3.2 Going green for the Arctic

Global warming in the Arctic could pose a great deal of advantages, although offset by severe consequences. Shipping companies, international organizations and governments should push for heavy environmental regulations and standards in the region. Considering that the region is still lacking proper infrastructure, emergency crews and procedures, the risk of oil spills or damages to fish banks are not to be taken lightly. The Polar Code introduced in 2017 already clarifies technical and organizational requirements for ships operating in Polar waters and yet further work should follow. European shipowners, despite not being able to single-handedly instigate change, wield substantial influence, controlling 39.5% of the world's merchant fleet. [19] Given this commanding position, it's imperative to spearhead the adoption of innovative, eco-friendly solutions aimed at safeguarding the environment. By leveraging their considerable influence, European shipowners can not only set industry standards but also gain a significant competitive edge in the long term.

The European shipping sector is actively championing environmental consciousness by endorsing initiatives such as the EU Net-Zero Industry Act and advocating for the integration of clean fuels like advanced biofuels and e-fuels. [20] This commitment is particularly crucial in regions like the Arctic, where rampant emissions have already inflicted substantial damage. For instance, data from the Arctic Council's Working Group on the *Protection of the Arctic Marine Environment* (PAME) reveals that in 2019, commercial fishing vessels accounted for 41% of all ships traversing the NSR, while other vessels, including bulk carriers, icebreakers, and research vessels, typically rely on high-emission fuels.

[19] https://www.ecsa.eu
[20] https://www.ecsa.eu/news/eu-net-zero-industry-act-european-shipowners-welcome-40-production-benchmark-clean-shipping

Moreover, PAME's second Arctic Shipping Status Report underscores the pressing need for cleaner alternatives, noting that approximately 10% of ships in Arctic waters burned high-emission oils as fuel in 2019.[21] By embracing environmentally sustainable practices and endorsing initiatives aimed at curbing emissions, the European shipping industry can play a pivotal role in preserving delicate ecosystems such as the Arctic and championing sustainability on a global scale.

Enhancing environmental regulations in the Arctic region is not only vital for wildlife preservation but also holds economic and political significance. Implementing stricter regulations would incentivize the industry while creating barriers for Russian and Asian shippers, countering potential political leverage. Norway has already taken steps in this direction since 2019 by imposing comprehensive regulations to protect Svalbard's natural wildlife, including a ban on heavy-fuel powered ships in nearby waters, crucial for the NSR. [22] Shipping companies should closely monitor similar policies advocated by Norway and other European countries at the International Maritime Organization level.

3.3 A new voice for Arctic shipping

The Northern Sea Route and its geopolitical significance present a multifaceted and intricate topic, necessitating comprehensive analyses beyond the scope of individual companies or states. The shipping industry, acutely cognizant of the geographical constraints and political complexities inherent in global trade, requires meticulous examination to effectively navigate its operations. While the Arctic Council serves as a platform for dialogue among nations involved in Arctic development, its efficacy is hindered by politicization and discord among member states, rendering it unlikely to offer clarity on the future of the Arctic region.

Given the multitude of intersecting issues surrounding shipping in the far north (such as climate change, international maritime laws, logistics, global value chains between major economies, diplomatic relations, or industrial and infrastructural development), it is challenging to formulate a fact-based position for European shipping companies. Consequently, there is a pressing need to establish a new platform to articulate the prospects of the NSR from a European standpoint. This initiative could take the form of a legal entity operating within existing institutions such as BIMCO

[21] https://arctic-council.org/news/navigating-the-future-of-arctic-shipping/
[22] https://www.regjeringen.no/en/aktuelt/endringer-i-miljoregelverket-pa-svalbard/id3024960/

(*Baltic and International Maritime Council*) or the *European Community Shipowners Association*, or it could emerge as a standalone endeavor. Its primary objective would be to conduct comprehensive assessments encompassing various stakeholders' perspectives, including those of the European Union and its member states, environmental non-governmental organizations, manufacturers, East Asian partners, and the shipbuilding industry. By evaluating emerging threats to the industry and assisting in the formulation of long-term strategies, this entity would play a crucial role in ensuring that the eventual utilization of the NSR as a commercially viable alternative is informed, sustainable, and mutually beneficial for all stakeholders involved.

4. Conclusion

Assessing the expansion of commercial routes in the Arctic demands careful consideration of multiple factors. Beyond the economic advantages driven by climate change and melting sea ice, the region's intricate geopolitical and environmental landscape plays a pivotal role. The opening of the NSR promises reduced navigation times and costs, but it also presents significant challenges. Navigating the evolving realm of international regulations and geopolitical tensions introduces both risks and opportunities. While the potential for increased competition and geopolitical friction looms, particularly with Russia's assertive stance and China's surging interests, there are also compelling commercial opportunity to capitalize on.

Enterprises must proactively adapt operations to Arctic conditions and anticipate geopolitical shifts that could impact route accessibility. Rigorous geopolitical due diligence, coupled with collaboration with regulatory bodies and global partners, is essential to navigate these complexities effectively. Moreover, as the regulatory landscape evolves under UNCLOS and the Arctic Council's policies, companies must demonstrate foresight and flexibility. Sustainability must remain central to expansion strategies. Embracing eco-friendly practices, such as adopting clean fuels and adhering to stringent environmental regulations, not only mitigates the ecological footprint but also enhances the market position of European companies as leaders in sustainable navigation.

In summary, the expansion of commercial routes in the Arctic presents significant opportunities but requires a comprehensive approach. Balancing economic gains with environmental stewardship and geopolitical awareness is paramount. Only through a well-rounded strategy can companies fully harness the Arctic's potential while fostering peace and sustainability in one of the world's last frontiers.

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