



Mini Cases

The Opening Up of the North Atlantic Routes

A Strategy Consultant was asked to consider the opportunities and risks for an event sometime in the distant future: the potential opening up of a North Atlantic sea route. The three potential routes include a northern sea route along the Russian coast, a Canadian route and a central polar route. The key attraction was the potential to shave between 13 to 16 days off a typical 37-44 day shipment between North America and Asia (see Exhibit 1 for typical shipping timelines between the US and China). What impact could this have on the countries along the route? How can governments and private industry prepare for this?

“The Northwest Passage is a sea route in the waters between the Davis Strait and the Bering Strait which connects the Atlantic to the Pacific Ocean...For most of the year the harsh Arctic climate means that the sea is frozen solid, however in the last few years rising global temperatures have increased the sea-ice summer melt...”¹ read the text of an article on the opening up of a northern trade route.

Situated on the European side of this passage was Iceland, which seemed like the perfect stopover for vessels carrying trade goods. The opportunity for economic development seemed bright: the creation of a northern port for transshipment or for refueling, along with other ship repair and related supply services.

The Consultant gathered some information that could be useful for stakeholders. In February 2022, global container volume was 12.4 million Twenty-foot equivalent units (TEUs).² For the trans-Atlantic trade, US imports from Europe were 2.2 million TEU in 2021.³ Sea containers came in 40-foot and 20-foot sizes and an average ship could hold anywhere from 10,000 TEU to 21,000 TEUs.⁴

The cost to ship from and to North America from East Asia varied depending on the particular route in question. For perspective, in May 2022, for shipments from Guangzhou, China, a 20ft

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container, shipping to the West Coast of the US was \$8,500 and to the East Coast, was \$10,500. For a 40ft container, the freight cost was \$15,000 to the West Coast, and to the East Coast, it was \$18,000. These were the average sea freight rates.⁵

Container shipping pre-tax profit for 2021 and 2022 was anticipated to be as high as \$300 billion, according to Drewry, an independent maritime research consultancy. For perspective, the same figure for 2020 was \$25.4 billion, according to The Journal of Commerce^{1,6}. On an equivalent unit basis, in 2021, on average, the largest chartered shipping lines earned operating profits of US\$861 per TEU.⁷

Currently, it was possible for ships to pass through one of the three north Atlantic trade routes between August and October each year. The ships needed to hire icebreakers at a cost of \$50,000 a day for anywhere from three to five days. In addition, it was usual for ships intending to pass through areas of ice to have hulls that were reinforced. In general, this meant that these ships contained about 40% more steel and were more expensive to build. One suggested option was to have a fleet of specialized ships to sail a north Atlantic route. This would mean goods would have to be transferred to these special ships for the passage.

The opportunities touted for countries along the route included refueling, resupplying and other services related to transshipment. There was a project underway in rural Iceland to build offshore wind power capacity to produce clean fuel – ammonia or methanol. One advantage of adding wind power was that it could be added in stages, perhaps 100 to 200 megawatts at a time. Each power plant could produce 7 megawatts and would need about 12 working days for maintenance. These power projects generated specialized jobs: technicians, chemists, chemical engineers.

¹ The Journal of Commerce is a biweekly magazine published in the United States that focuses on global trade topics.



While the prospect of a north Atlantic route was years away, it was nonetheless an interesting opportunity to consider. On one hand there were opportunities for government and private industry to supply the infrastructure and training to take advantage of this possibility.

On the other hand, proponents had to contend with the fact that it would only take one major disaster: a ship running around and spilling its toxic contents for example, for the pristine waters around the island to be irreversibly polluted. How should the Icelandic government weigh the advantages and disadvantages of this opportunity? How should they decide how to assess the environmental risks? Could the risk or risks be anticipated and/or mitigated?

The Consultant looked at the current situation and wondered what to recommend.

Exhibit 1 – Shipping times between the US and China

Coast	Port to Port	Average Time
USA West Coast	Guangzhou to Los Angeles	27 days
	Ningbo to Seattle	23 days
	Qingdao to Long Beach	19 days
	Shenzhen to LA	18 days
USA East Coast	Shenzhen to Miami	44 days
	Xiamen to Houston	42 days
	Qingdao to New York	40 days
	Shanghai to Charleston	37 days

<https://jingsourcing.com/shipping-time-from-china-to-us/>

¹ <https://cornellsailing.com/archives/past-rallies/destinations/northwest-passage/>

² https://www.joc.com/maritime-news/container-lines/sharp-drop-february-container-volumes-draws-mixed-analysis_20220408.html

³ https://www.joc.com/maritime-news/trans-atlantic-container-trade-growth-accelerating_20210122.html

⁴ <https://www.asianausa.com/how-much-bigger-can-container-ships-get/>

⁵ <https://topshipping.co/articles/how-much-will-chinas-shipping-cost-be-in-2022>

⁶ <https://fortune.com/2021/12/03/shipping-container-record-profit-supply-chain-breakdown/>

⁷ <https://supplychaindigital.com/logistics/shipping-profits-for-2021-absurd-says-sea-intelligence>