

A challenge in getting from A to B....and C

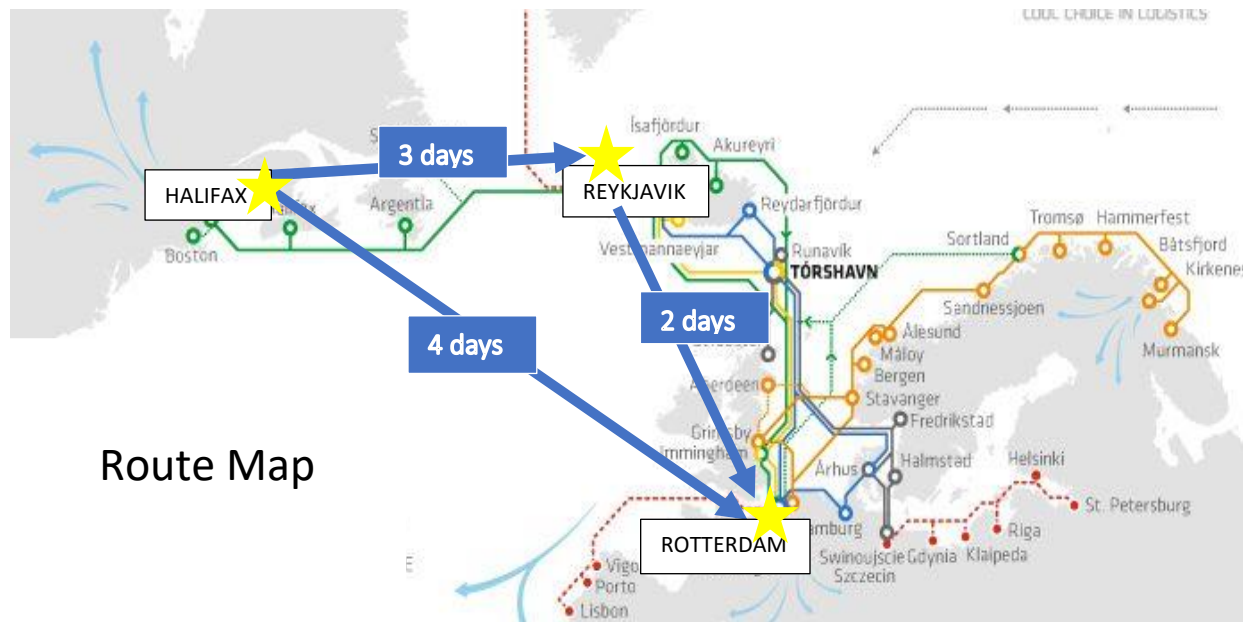
Key Concepts: Logistics Planning

Transporting goods from suppliers to customers involves the complex coordination of all operations across the supply chain. This includes land and rail freight carriers (i.e. trucks and trains), cruise, cargo and container vessels, and the ports where all of these carriers intersect. Getting goods from Halifax to other ports around the globe involves very detailed coordination of all of these partners, and even when a plan is in place, it is always a dynamic plan that can shift due to extreme weather, geopolitical issues, accidents, unexpected hikes in fuel costs, and competition for cargo space.

Activity:

You are the owner of a cargo line. You and your team will determine the ideal cargo load you will carry on a single vessel for a one-way trip from the port of Halifax to the port of Rotterdam (The Netherlands), via the port of Reykjavik (Iceland). Your objectives are to carry the most cargo, most efficiently and safely, and for the most profit. Here are some things to consider;

- Each 'touch' (moving a container from truck/train/ship/or stack) has a cost, so you will want to minimize 'touches'
- Each type of cargo/container has its own carrying cost (day of travel) and idling cost (day at port)
- When you unload in Reykjavik you can also reload for the second part of the journey
- Each container begins and ends its journey from a stack in the terminal (loading/unloading fee)
- There is a mandatory one-day stopover in Rykjavik
- Fixed fee to the vessel owner is \$10/day (cost of fuel, crew) for every day of the voyage (including loading and unloading days)
- Some cargo is more profitable, but can also be more expensive if days are added
- Stacks may only be 3 containers high, and cargo must fit within the 'footprint' of your vessel
- You may use any combination of cargo that meets the requirements, but you are limited to the cargo that is available (i.e. the blocks you have) – please return unwanted cargo to the terminal



Route Map

Voyage	1	2	3	4	5	6	7	8
Activity	Load	Journey	Journey	Journey	Unload/reload/ Wait	Journey	Journey	Unload

Cargo List

Fee to you (revenue)	Container size/colour	Costs for loading/unloading	Costs for additional touches	Costs/day of journey	Costs for waiting at port /day	Loading requirements	Termination port
\$20	Small yellow, red, or orange containers	\$1	\$1	\$1	\$1	Can go anywhere on the vessel	Reykjavik
\$30	Small purple, blue, green (heavier)	\$2	\$1	\$2	\$1	Cannot be on top of stack	Rotterdam
\$50	Medium sized containers (all colours)	\$5	\$3	\$3	\$3	Can go anywhere on vessel	Reykjavik
\$100	Special cargo - cylinders	\$15	\$15	\$2	\$2	Can only go on top level of stacks	Rotterdam
\$150	Largest containers - Refrigerated	\$10	\$10	\$10	\$10	Can only go on bottom level of stack	Rotterdam