

Challenge name: Recommendation Engine

Description

A recommendation (or optimization) engine is a decision support tool (a logic, an algorithm) that provides commercial advice/answers via some (interactive) interface or application.

Ships earn revenue on laden legs (carrying cargo) and incur costs associated with ballast legs (empty, dead heads). Optimization is subject to lots of real-world constraints.

Example: After one of our ships discharges a gasoline cargo in New York Harbour, what should the next commercial action be? Should the vessel sail to Europe? Or to the US Gulf? To pick up a new cargo (i.e., the two real-life options in the given case), the recommendation engine *could* in this case provide an answer like *“Sail to the US Gulf”*.

Current status

Currently Maersk Tankers predicts its own forward price curves, thereby providing guidance on commercial actions - and the predictions have already led to stronger-than-average financial industry performance. However, sometimes the forward curves leave too much room for interpretation as well as not always being perfectly aligned to the questions that are being raised.

Desired benefits

Having a recommendation engine will allow Maersk Tankers to scale its business by making faster, and hopefully also better, commercial decisions. And as such, the recommendation engine can help our revenue and profits to grow. Additionally, a recommendation allows Maersk Tankers to provide a better customer experience through shorter response lead time.

Solution criteria

- A method or an algorithm
- An interface/application
- Solution performance metrics

Data sets

- Historical weekly time series for the freight rates
- Predicted forward price curves
- AIS data

Clues to get started

- Which markets to cover?
- Define decision nodes (key ports where Maersk Tankers makes decisions)
- Define action state space (what are the potential actions at each decision node)
- Recommendation granularity (weekly, monthly)