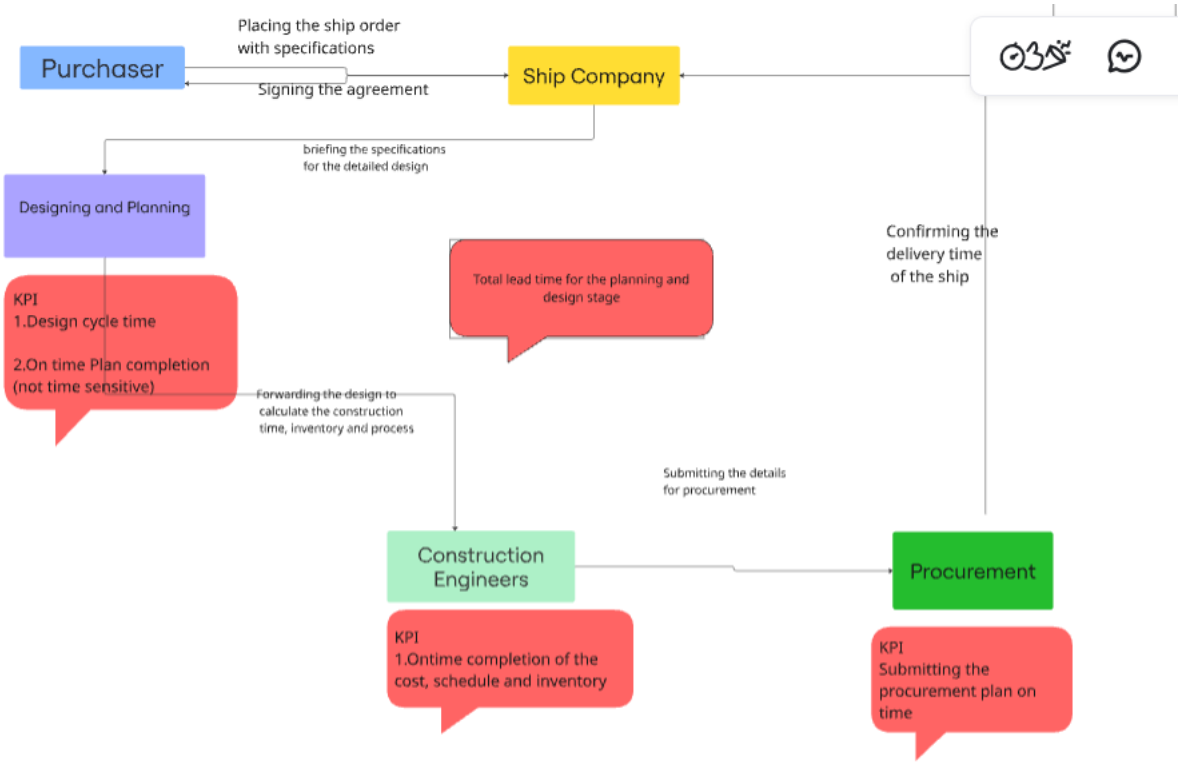
Report for designing the Simulation Platform for Supply Chain Maturity Analysis

Group 1

We will be evaluating only the lead time for the ship construction process

Following are the 2 processes we will be focusing depending on the limited data provided and the complexity of the ship building process

1. **Planning and designing stage**
   This stage includes the steps of designing the ship as required by the purchaser. Further analysing the cost, schedule and the inventory from the construction team and finally the finalising the procurement plan by the procurement division.



KPI's
There will be 5 KPI's overall in the designing phase

Designing and planning

- Design time cycle
- On time plan completion (not time sensitive)

Construction Engineers

- Construction evaluation cycle
- Ontime completion of the costs, schedule and the inventory schedule (not time sensitive)

Procurement

- Submitting the procurement plan time

Overall KPI
Total lead time for the planning and designing stage =

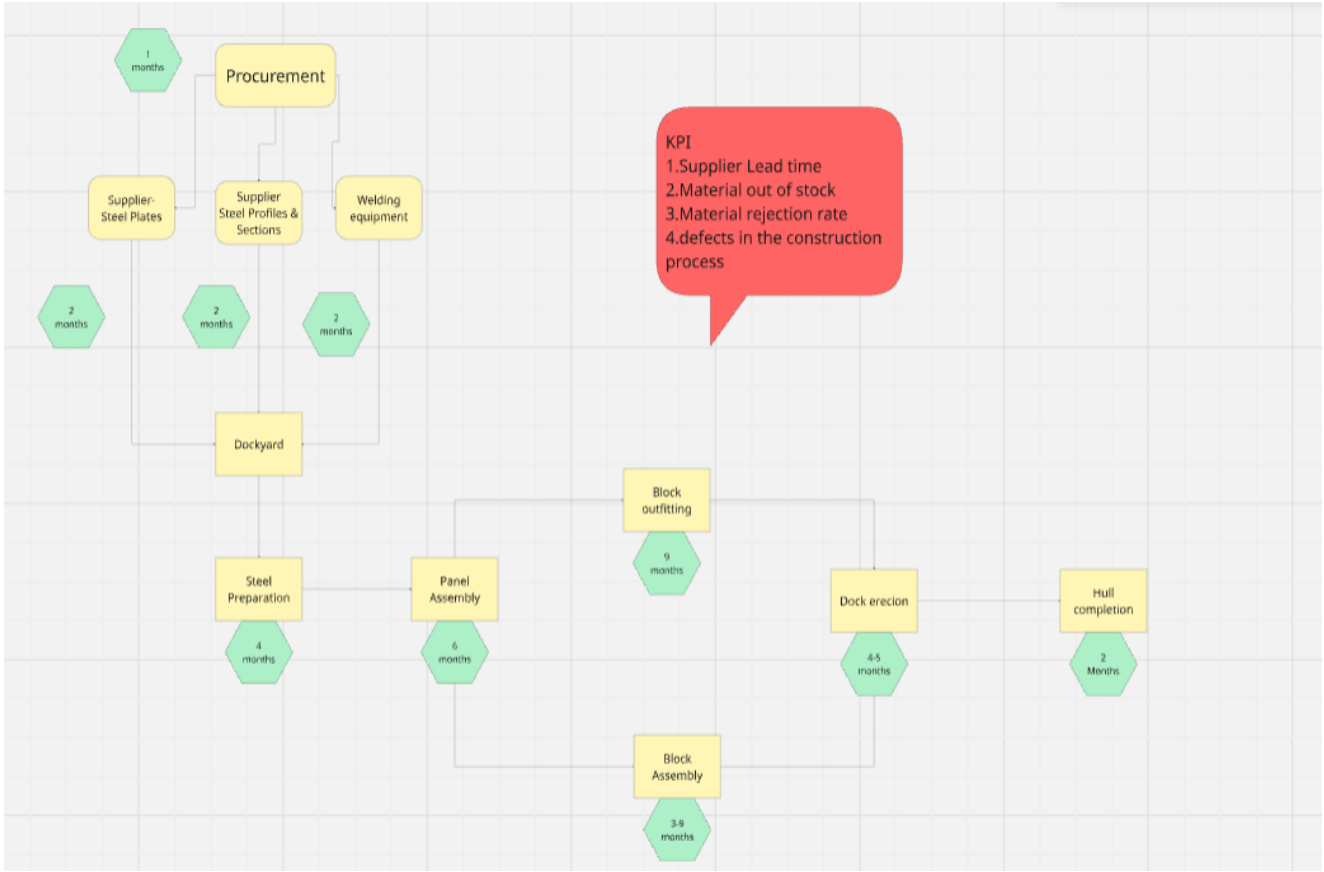
Design time cycle+ Construction evaluation cycle+ Submitting the procurement plan

** Any change in lead time will affect the total lead time for planning and designing stage

2. Hull constructions stage

The hull of a ship is its main, watertight outer body that provides buoyancy, allowing it to float, and protects the cargo, machinery, and passengers within.

This stage includes the Procurement, delivery, Steel Preparation (cutting, priming), Panel Assembly (plates +stiffeners), Block Assembly (plates + profiles), Pre-outfitting , Erection (block joining) , Hull completion.



KPIs

KPIs which have the direct impact on the project base line

- Supplier Lead time
  Extended lead caused by delays, shifts the project baseline

- Defects/delays in the construction process
  Extended lead time shifts the project baseline

KPI's with 'what if' scenarios

- Material out of stock
  Stock-outs of profiles or small plates cause local delays (1–2 weeks).

- Material rejection rate
  High rejection → reordering → 2–6 week delay depending on grade availability.

  We could also add additional suppliers and include in "what- if" scenarios

Assumptions

- We assume that the lead time confirmed by the procurement division and the construction team will be the final delivery time of the ship.

- Any changes in lead time during the planning and designing process will not effect the final delivery time. The final delivery date will be affected only from the transactions/constructions happening after the signing of the contract.