



The goal is to minimize total costs.

Costs are calculated as follows:

- Storage costs amount to €0.50 per unit per week.
- Costs for stockouts (out-of-stock situations) amount to €1.00 per unit per week (penalties or costs due to customer loss).
- Setup costs are €50 per production batch across all production stages.
- Transportation costs are €20 per transport, with a maximum of 20 bottles per transport.
- The sum of the costs across all stages throughout the game determines the total supply chain costs.

- Backorders are recorded and delivered later.
- Market demand is externally determined.
- Production capacities are unlimited.

Simulate the beer game supply chain with

**Framework:**

One week production time

Number and sequence of supply chain participants is fixed

Initial configuration is fixed: WIP = 4, Transport = 4, Stock = 12, Initial Order = 4

**3 demand characteristics:**

- 1) Normal distributed: 10 mean, 10 std. dev.
- 2) Trend (+-max 4), demand can fall or rise every 4 weeks.
- 3) Normal distributed + Trend in mean

**KPIs to be chosen to evaluate simulation goals.**

During the live demonstration you will get 30 advised demand numbers for your simulation which will refer the 3 given demand characteristics.

You are tasked with optimizing the supply chain presented on the following pages.

**Content:**

1. Modeling and simulation of these core processes in simulation software.
2. Development of planning and control alternatives for the supply chain.
3. Simulation-based implementation, evaluation, and selection of the best identified solution.