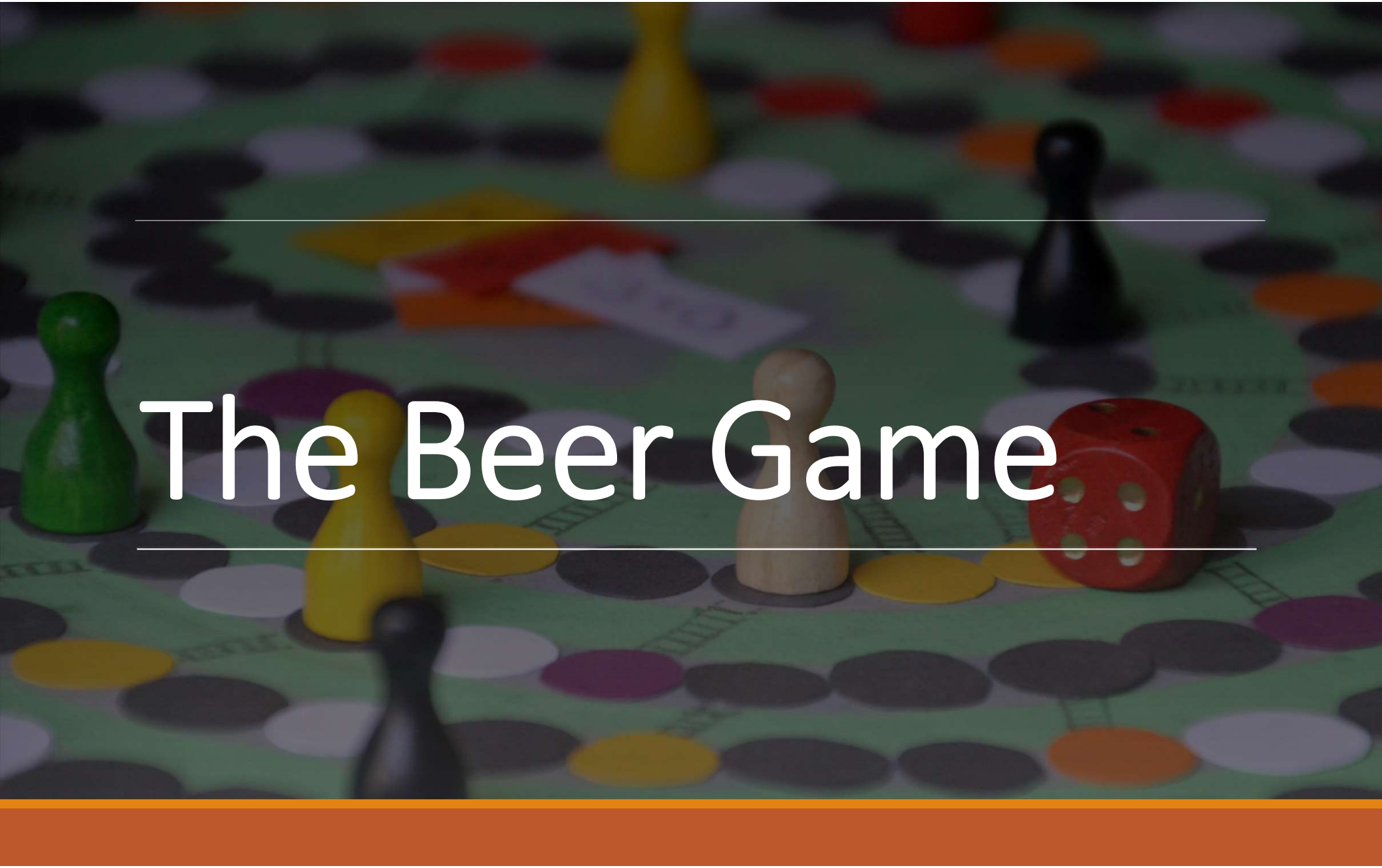
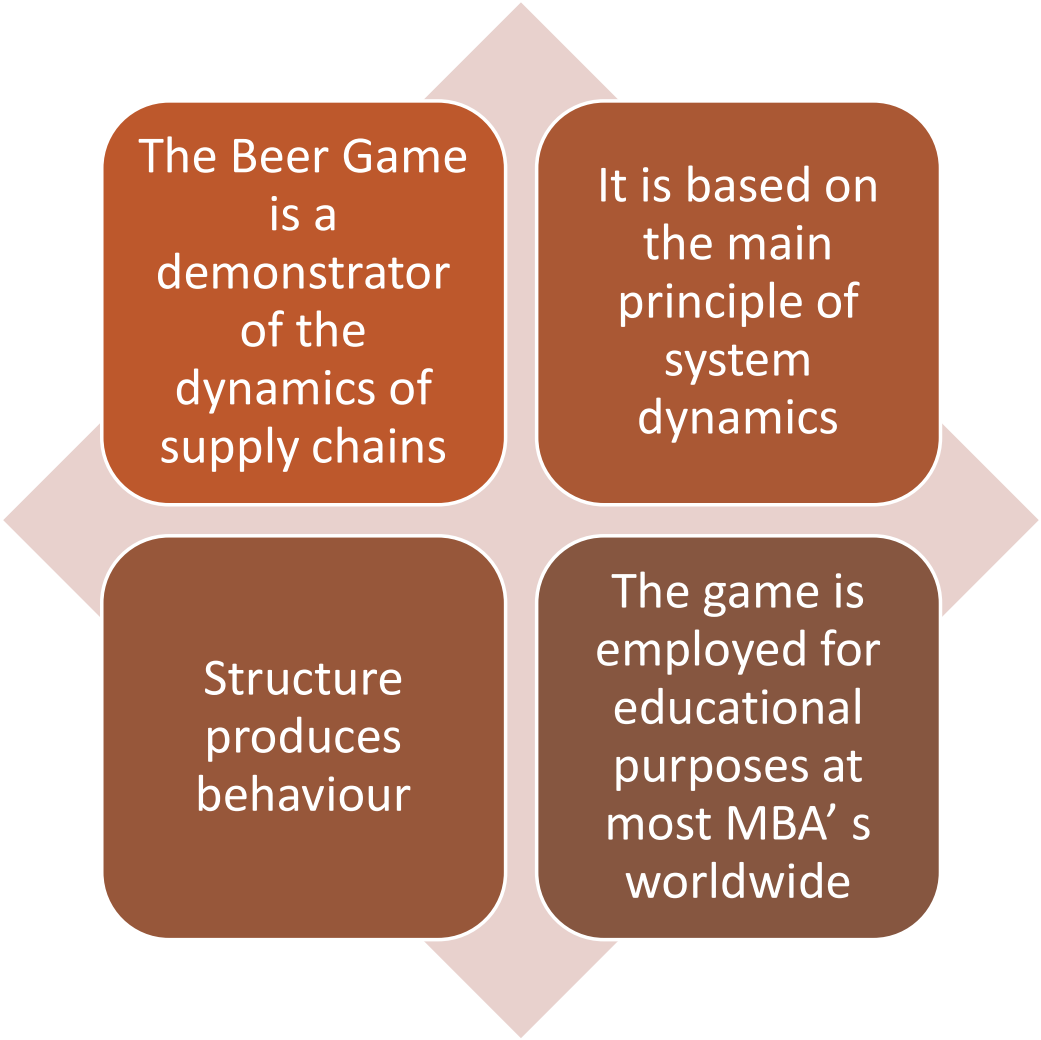

The Beer Game



Introduction

Why?

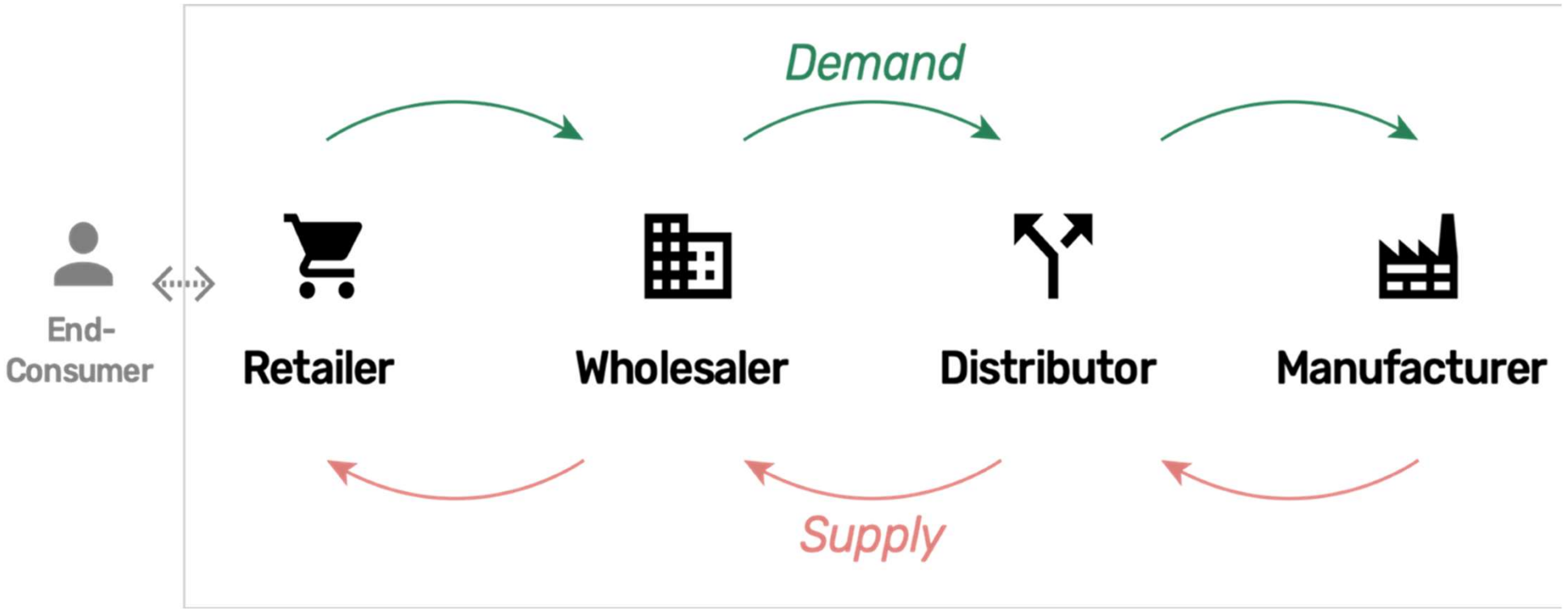
It is useful to illustrate various **Operations Management** concepts and principles

The Beer Game (and its results) shows why **Management** is important from both an academic and a practice standpoint

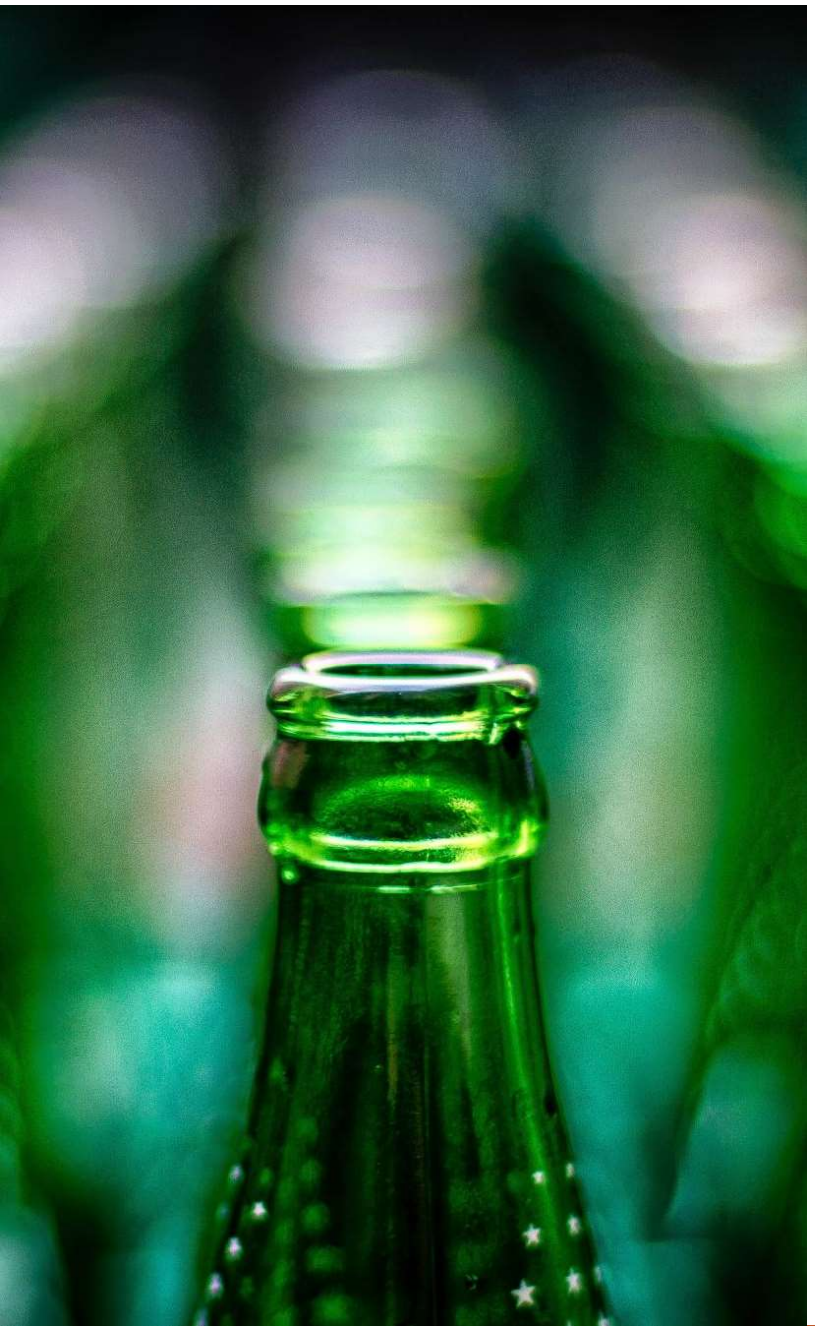
We focus on the impact of our decisions to the entire system

Description

- 4 nodes, each with a different role:
  - **Retailer** (e.g., a supermarket that sells beer to end-customers)
  - **Wholesaler** (e.g., a local warehouse that consolidates various items and provides them to local retailers)
  - **Distributor** (e.g., a national importer of this particular beer with a centralised warehouse)
  - **Manufacturer**, where beer is brewed and packaged



Supply Chain Structure



Overview

- Each position:
  - Is identical, in terms of the rules of the game, **except** for the manufacturer
  - Has an initial inventory of beer
  - Receives orders from and ships beer to the downstream node of the chain
  - Orders beer from the upstream node

Assumptions

- **Shipping delay** (or production delay): 3 weeks
- If you don't have enough stock to fulfil demand, quantities will be added to your backlog (**partial delivery is allowed**)
- **No mailing delay**, you place an order, and this is processed by your supplier
- **Initial inventory**: twelve (12) beers in each node
- Production, shipping, and warehouse **capacity is infinite**

Objective

- **Fulfil** your client's demand
- **Minimise** the operating cost
- Costs are computed as follows:
- Holding cost: £0.5 per beer per week
- Out-of-stock (backlog) cost: £1 per beer per week

Operating cost = Holding + Backlog

Rules

- **No communication** between nodes is allowed
- Only communication is through the **passing of orders** and the receiving of beer
- **Retailers** are the only ones knowing **actual demand** (i.e., end-customer orders) – they should not reveal this information to anyone else

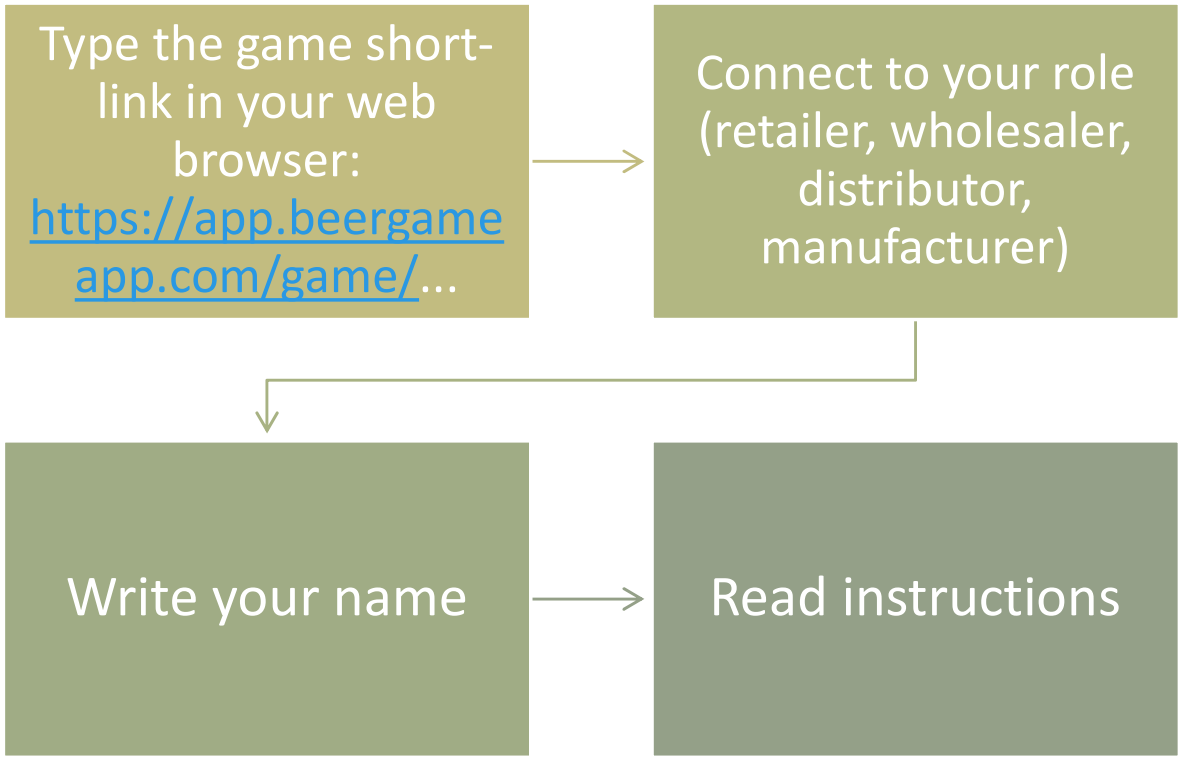
Additional Information

- There exist **twelve (12)** beers in each inventory position (warehouse of each node)
- There are **deliveries planned** for the first 2 weeks
- The game will stop after an unknown number of weeks

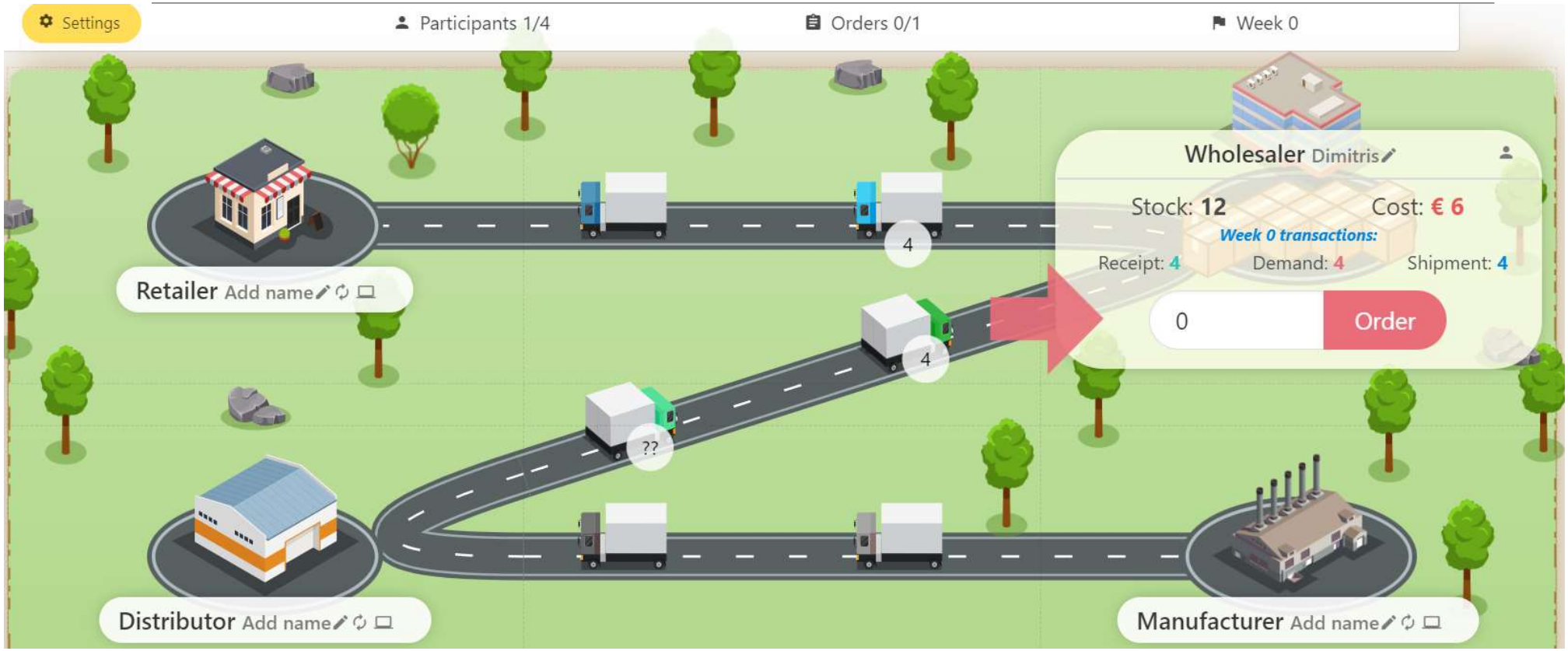
Decision

- **Order quantity** per week
- **Objective**: Fulfil your client's demand and **minimise** your cost
  - Holding cost: £0.5 per beer per week
  - Out-of-stock (backlog) cost: £1 per beer per week

How to Join


Type the game short-link in your web browser: https://app.beergameapp.com/game/...
Connect to your role (retailer, wholesaler, distributor, manufacturer)
Write your name
Read instructions

Interface


Settings
Participants 1/4
Orders 0/1
Week 0
Wholesaler Dimitris
Stock: 12
Cost: € 6
Week 0 transactions:
Receipt: 4
Demand: 4
Shipment: 4
0
Order
Retailer Add name
Distributor Add name
Manufacturer Add name
4
4
??

Interface

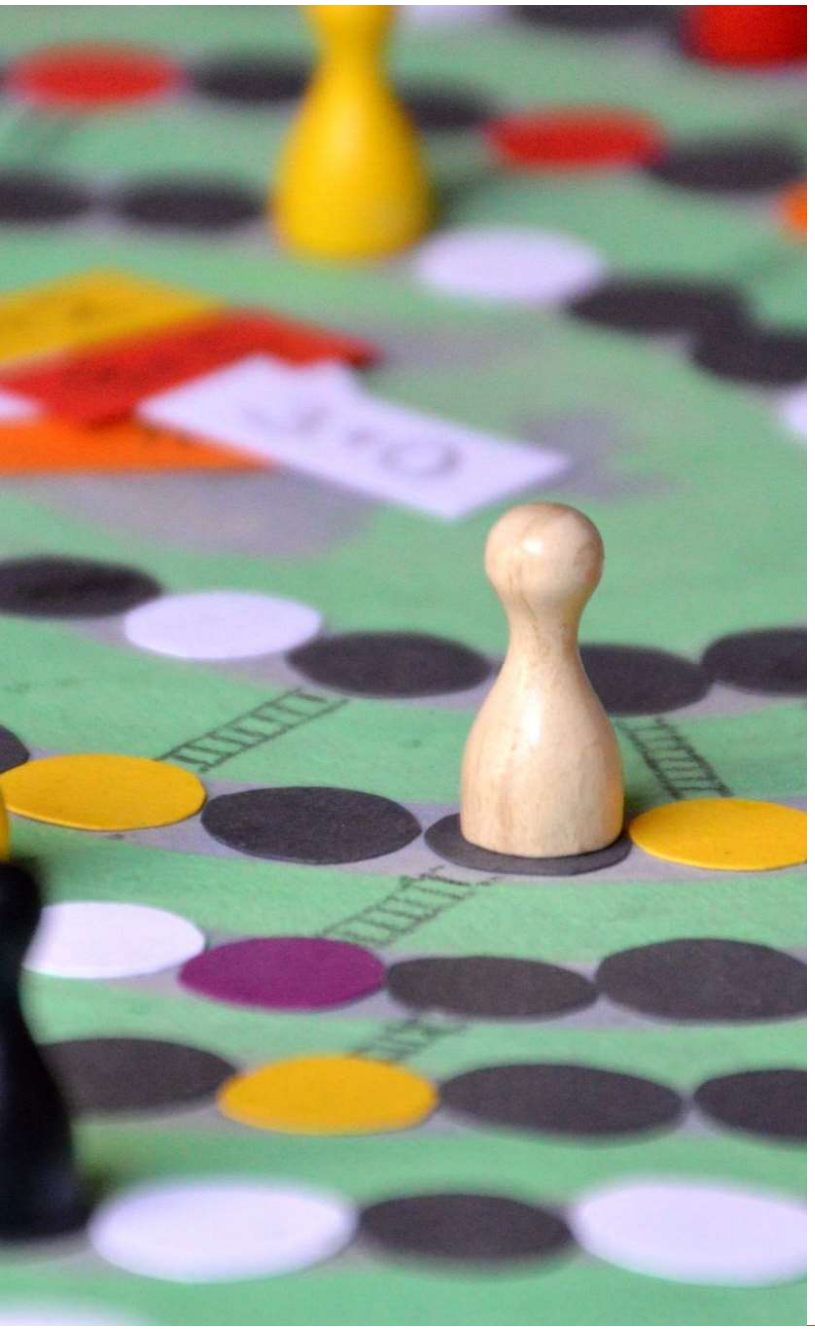
Demand:
order received
from your client

Current stock /
backlog

Delivery:
quantity received
from your supplier

Shipment:
quantity sent to
your client

Order: place your order



Demonstration

Let's play together:

https://play.zensimu.com/game/lZyxf0oS4yclsN30rHja

	Table 1	Table 2	Table 3	Table 4
Retailer				
Wholesaler				
Distributor				
Manufacturer				

Teams

Let's have some fun

- Follow your link
- Connect to your role
- Write your name
- Read instructions