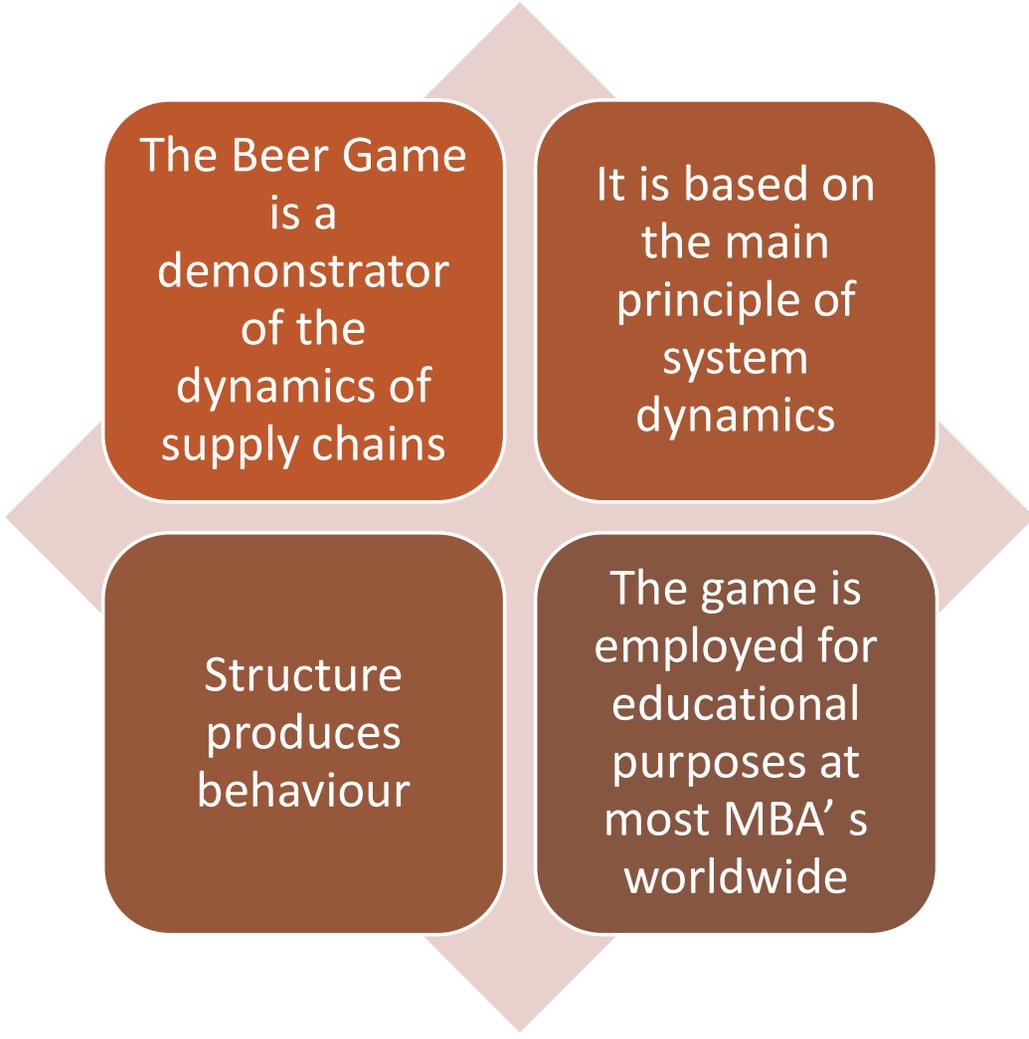
A close-up photograph of a board game board. The board is green with a pattern of colorful circles in shades of grey, yellow, purple, and orange. Several wooden game pieces are scattered across the board, including a green piece, a yellow piece, a light-colored piece, and a black piece. A red die with white pips is also visible on the right side. The text "The Beer Game" is overlaid in white, centered on the board. Two thin white horizontal lines are positioned above and below the text.

The Beer Game



The Beer Game
is a
demonstrator
of the
dynamics of
supply chains

It is based on
the main
principle of
system
dynamics

Structure
produces
behaviour

The game is
employed for
educational
purposes at
most MBA' s
worldwide

Introduction

Why?



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



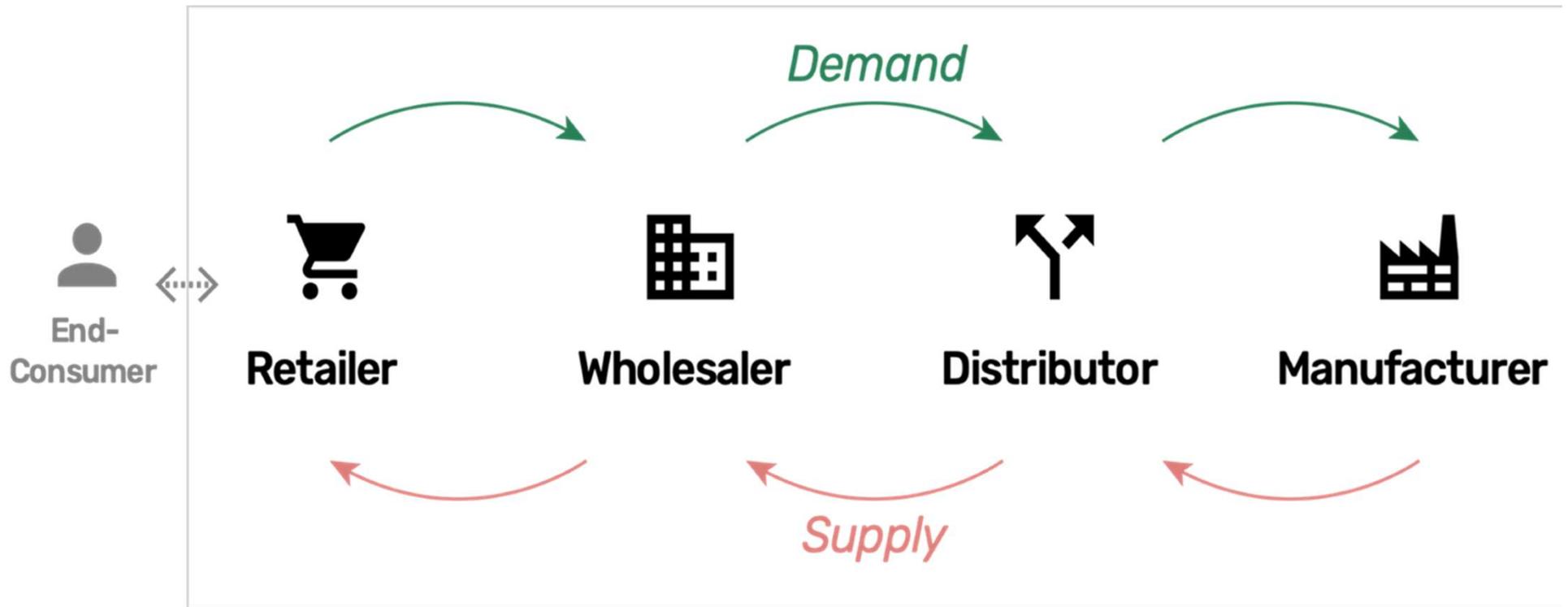
The Beer Game (and its results) shows why **Management** is important from both an academic and a practice standpoint



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

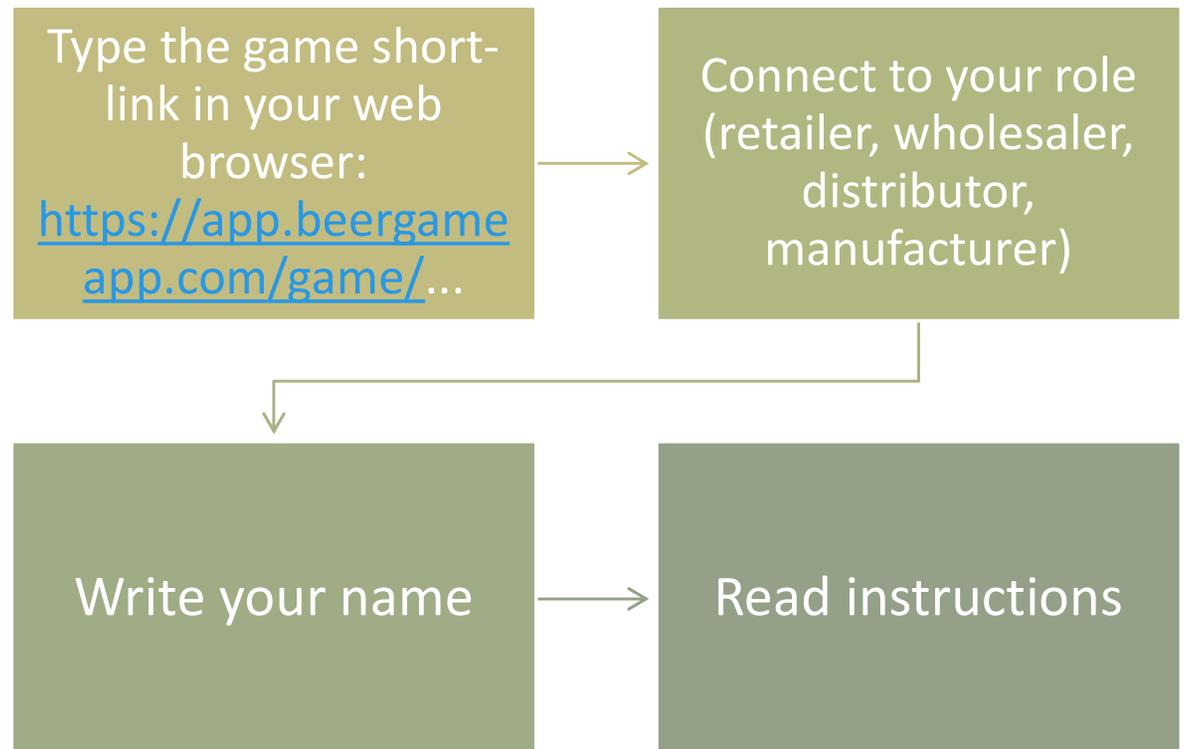
Additional Information

- § 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



Interface

The interface displays a supply chain simulation on a map. At the top, there are navigation elements: a yellow 'Settings' button, 'Participants 1/4', 'Orders 0/1', and 'Week 0'. The map features four main locations: a Retailer (top left), a Distributor (bottom left), a Manufacturer (bottom right), and a Wholesaler (top right). Trucks are shown moving between these locations. A red arrow points from a truck on the road to a data panel for the Wholesaler.

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 ✎ ↻ 🗨

Interface

The screenshot shows a game interface for 'Wholesaler Dimitris' during 'Week 0'. The interface displays the following information:

- Stock:** 12
- Cost:** € 6
- Week 0 transactions:**
 - Receipt: 4
 - Demand: 4
 - Shipment: 4
- Order:** 0 (with an 'Order' button)

Annotations explain the components:

- Demand:** order received from your client (points to Demand: 4)
- Current stock / backlog** (points to Stock: 12)
- Delivery:** quantity received from your supplier (points to Receipt: 4)
- Shipment:** quantity sent to your client (points to Shipment: 4)
- Order:** place your order (points to the Order button)



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