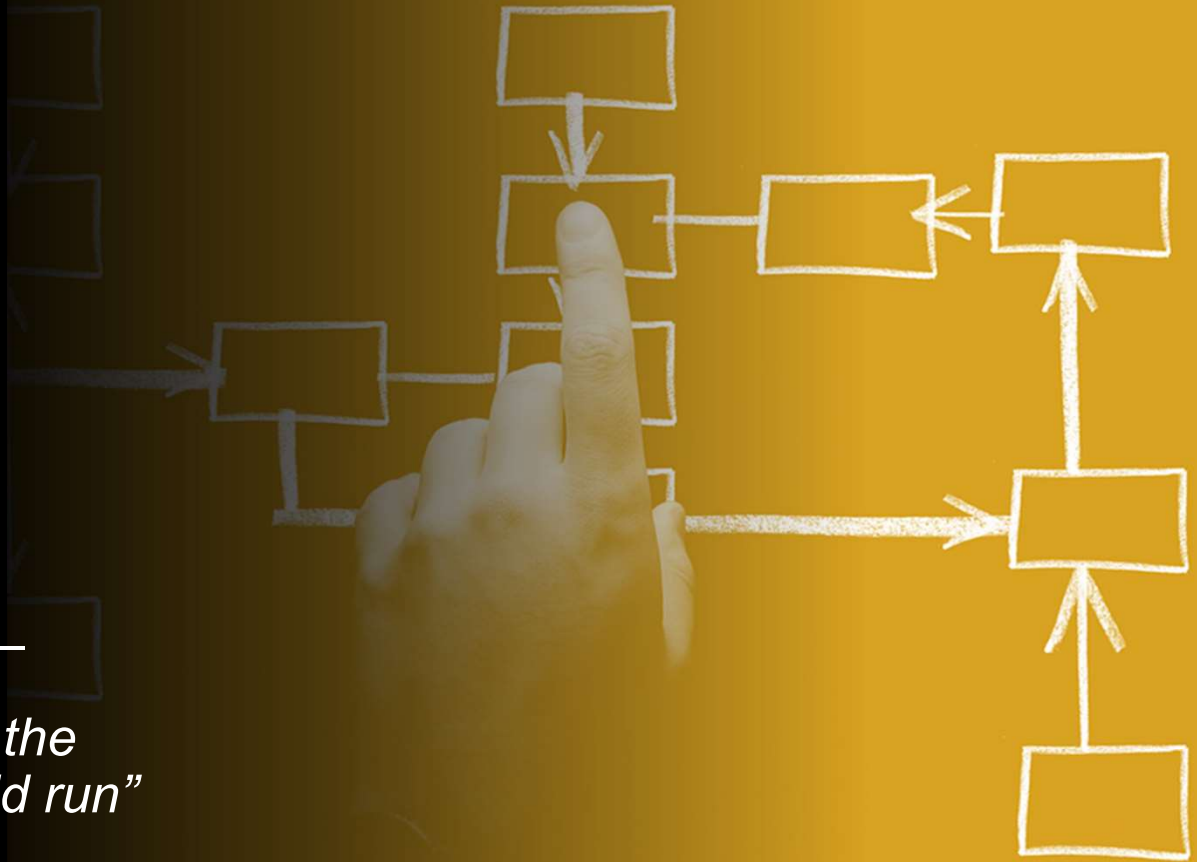


Operations  
Management  
**MLI21C617**

*“Operations may not run the world, but it makes the world run”*

Lecturer: Misa Bakajic

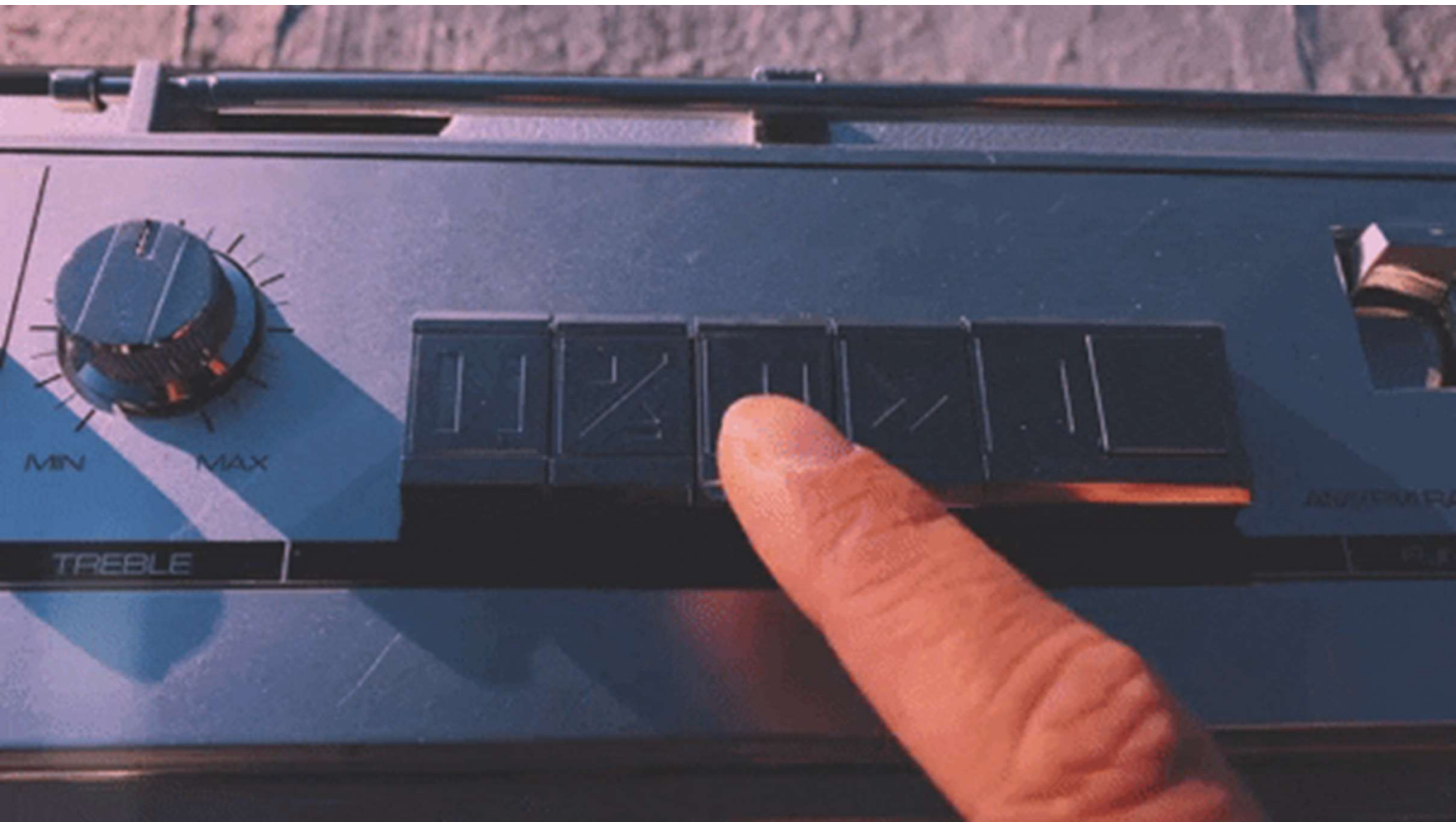
Spring 2024



Password: Langley

# LECTURE 9 Beer Game Simulation

**A!**



# Recap

1. Inventory is tied up capital and a buffer against uncertainty
2. Inventory management considers order quantity and demand quantity
3. EOQ tries to balance cost of holding inventory versus ordering costs
4. Demand tends to have a deterministic component and stochastic component
5. Order lead time & demand rate can be combine to figure out lead-time usage

**A!**

## Background of Beer game

- There is no actual beer in the Beer Game ☹️
- The game was invented by Jay Wright Forrester at the MIT Sloan School of Management in 1960.
- The beer game was a result of his work on system dynamics.
- Originally game was played with physical items (pen, paper, printed tablecloths, and poker chips).
- In this class we will use web based simulation(s)

**A!**

# Introduction

- You are assigned 1 of 4 roles in a supply chain
- You receive orders from customers
- You must decide how much to order from suppliers
- Things go well or they do not go so well for you

**A!**

## The game objective

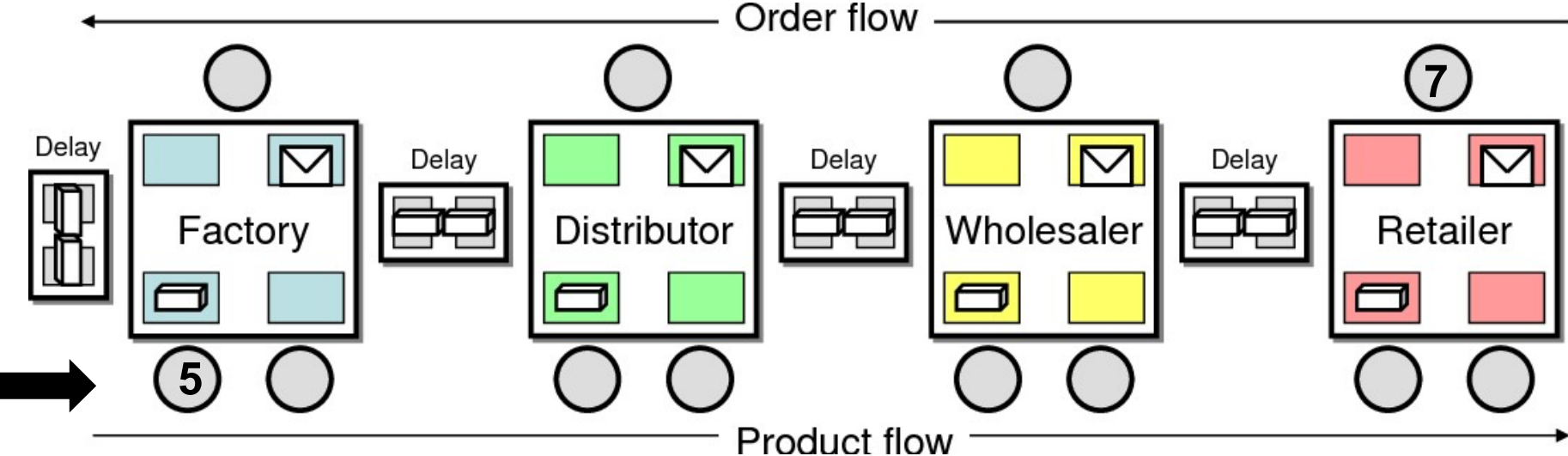
The task of each supply chain is to produce and deliver units of beer: factory produces the beer and each segments delivers the order until it reaches the external customer at the downstream

The aim of the players is to fulfil the incoming orders of beer.

**A!**



# Order and product flow

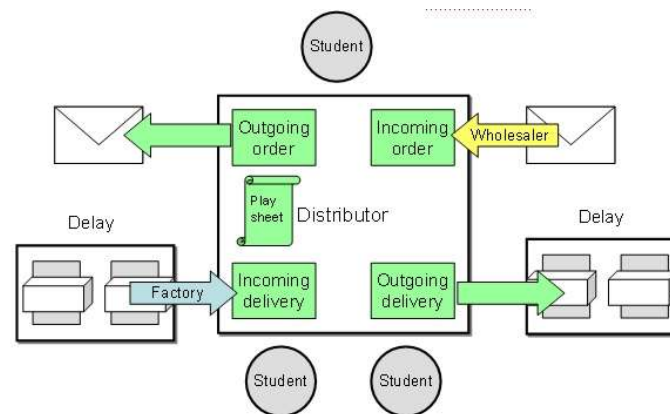


**A!**

# Game play

Automated

- 1.receive incoming orders
- 2.receive incoming deliveries
- 3.update play sheets (outstanding deliveries and inventory)
- 4.send out deliveries, and finally
- 5.decide on the amount to be ordered



**A!**

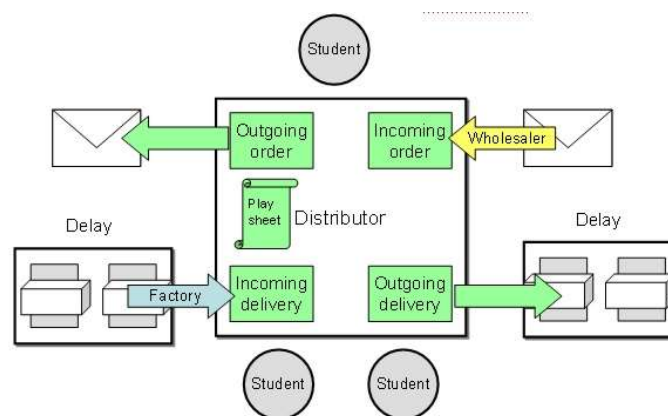
# Game dynamics

## What you know

- Incoming delivery arriving from being Delayed
- Outgoing delivery leaving from existing inventory

## What you do not know

- Downstream - Your customer's orders
- Upstream - Your suppliers orders



**A!**

## Rules of the game

- Every order has to be fulfilled, either directly (should the players' inventory be large enough) or in later in rounds.
- Orders that cannot be filed become part of the backlog
- Inventory holding penalty costs (varies with game)
- Each item on backlog penalty costs (varies with game)

The primary aim of each player is to keep their costs low.

Optimal strategy is to run the business with as little stock as possible without being forced to “move into backorder

**A!**

## FAQ Questions

**Can we collaborate for the assignment?**

This is an independent assignment

**Can we talk to each other while we play?**

Yes. But do not share order information (including signalling)

**What do I need to hand in after the game?**

One page report (See Lesson 9 folder)

**Does winning or losing impact my grade?**

**A!** Game performance does not impact the grade directly

# Game options



**GROUPS 1 - 4 play Bakes Beans Game 1: Open University**

<https://www2.open.ac.uk/openlearn/supply-chain/index.html>



**GROUPS 5 - 8 play Beer Game 2 : Open University**

<https://beergame.transentis.com/>



**GROUPS 9 - 12 play Beer Game 3 : MA Systems**

<https://beergame.masystem.se/>

**A!**

## Getting Started

1. One person creates a game with a unique name
2. They tell others the name or send them a link to join
3. Missing a player? it should be able to add a computer player
4. Everyone read the instructions!
5. Play some kind of practice round to get a feel of the game
6. Pay attention to the graphs that are available after the game!
7. Play 50 rounds in a row
8. Save the

**A!**

**A!**

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**Kiitos  
aalto.fi**