TÉCNICO LISBOA

Beer Game

Bruna Mota

Department of Engineering and Management

Instituto Superior Técnico

Lisbon, Portugal

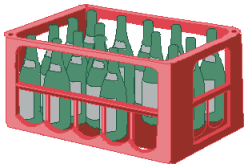
Introduction

- Simulation based game
- The origin is dated in 60's and from MIT
- Initially: physical game
- Nowadays: PC and online versions

Objectives

- To play in team
- To experience how supply chains work
- To witness the effects of variability in a supply chain – The Bullwhip Effect
- To have fun

Rules

- 4 groups per chain (game) = 4 entities
- Objective: Satisfy Customer Demand while Minimizing Total Cost
  - Maintain low inventory levels
  - Satisfy all orders
  - Backorder persists until it is fulfilled
- Time horizon: up to 25 weeks
- 1 unit = 

Rules

- Costs per week
  - Unitary holding cost: €5
  - Unitary lost sale cost: €10
- Product & Information Lead Times
  - 2 weeks between sending & reception

Rules

- In each round (= 1 week)
  - We receive products from our supplier
  - We receive orders from our customer
  - We order to our supplier
  - We ship product to our customer

- Decision: how much to order?

How to play

- **http://scgames.bauer.uh.edu/**

How to play

Beer game

Click here if you are an **instructor**

Click here if you want **to play the game**

Click here for player manual (Instructor manual will be available once you create your games)

Frequently asked questions

Screenshots of instructor screens

Screenshots of player screens

Demo of player screens

Information regarding features of the game

About this game

How to play

scgames.bauer.uh.edu/viewallinst.asp

INFO340Fall2011Section2	12	Game Setup/Monitor Page
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ITESM-6:00pm	10	Game Setup/Monitor Page
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ITESM-M1ABC	7	Game Setup/Monitor Page
ITESM-Morelia	5	Game Setup/Monitor Page
ITESMQro	10	Game Setup/Monitor Page
ITESM-SLP	10	Game Setup/Monitor Page
ITESM-UV	15	Game Setup/Monitor Page
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ITESO2012	3	Game Setup/Monitor Page
ITESO2012A	3	Game Setup/Monitor Page
ITESO2012B	3	Game Setup/Monitor Page
ITESO2013	1	Game Setup/Monitor Page

How to play

List of the all Games for IST_OE-DEG-2013 account

Click on your Team to proceed

GAME1

GAME2

GAME3

GAME4

GAME5

GAME6

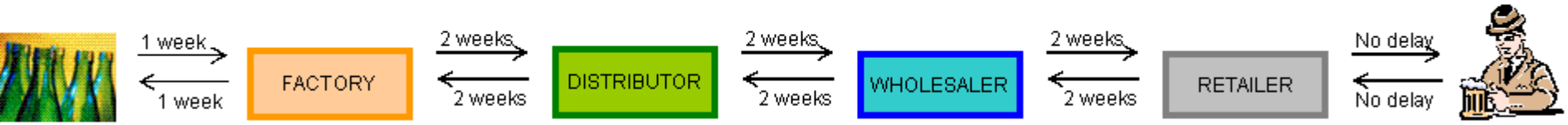
Go back to the List of Groups

Go back to the Welcome Page

How to play

GAME 1

Click on your position to proceed



For proper view of the game page, please set your screen resolution to atleast 1024 by 768.

How to play


Login for Factory
Institution name : IST_OE-DEG-2013
Game number : 1
Please Enter your Password :
Login
GCA

How to play

Input Screen for Wholesaler of Game 1

For Week **8**

Demand from Retailer :	**5**	Beginning Inventory :	**0**
On Backorder :	**1**	Incoming Shipment :	**6**
Total requirements :	**6**	Total available :	**6**

Units Shipped to Retailer this week: **6**
Ending inventory **0**
Backorder at the end of this week : **0**

Enter the number of units to be purchased from Distributor : 6

submit

How to play

Input Screen for Wholesaler of Game 1

For Week **8**

Demand from Retailer :	**5**	Beginning Inventory :	**0**
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Backorder at the end of this week : **0**

Enter the number of units to be purchased from Distributor : 6
submit

Wholesaler INFORMATION FOR THE LAST TEN WEEKS

NOTE : The two orders placed to Distributor before week 1 are 4 units each

Week	Inv/Bk	Demand	Incom. ship	Outg. ship	Order placed	Current cost
1	12	4	4	4	4	60
2	12	4	4	4	4	120
3	5	11	4	11	11	145
4	3	6	4	6	6	160
5	-1	8	4	7	8	170
6	-2	5	4	4	6	190
7	-1	10	11	11	12	200

Status of other Supply Chain Channel Members of Game 1
This page will be refreshed every 15 seconds

When all the players have completed the order for the current week, the player will automatically receive a link to proceed to next week

Week 8

The status will be updated in 7 seconds.

Factory : **Has not ordered**

Distributor : **Has not ordered**

Wholesaler : **Has not ordered**

Retailer : **Order placed**

Created by Chalam

Inventory and Order Status plots For Wholesaler

Demand Plot | Order plot | Inv/Backorder Plot | Plot all

Supply Chain Settings for Wholesaler:
Holding cost : **5**
Backorder cost : **10**
Downstream Player : Retailer
Upstream Player: Distributor
Shipping Delay : **2 wks** (Distributor -> Wholesaler, Wholesaler -> Retailer)
Information Delay : **2 wks** (Wholesaler -> Distributor, Retailer -> Wholesaler)

How to play

Wholesaler INFORMATION FOR THE LAST TEN WEEKS

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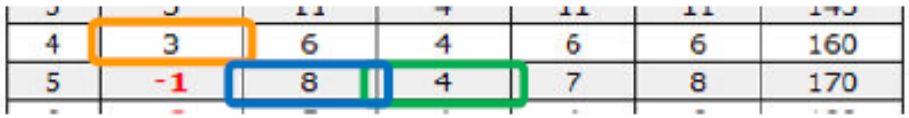

$$Inv(t) + Incom\ ship(t+1) - Demand(t+1)$$

=

3+4-8

=

-1

How to play

Wholesaler INFORMATION FOR THE LAST TEN WEEKS

NOTE : The two orders placed to Distributor before week 1 are 4 units each

Week	Inv/Bk	Demand	Incom. ship	Outg. ship	Order placed	Current cost
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How to play

WHOLESALER STATUS

End Of Week **16**

Your order(to the distributor) for the Week **16** is **55**
Your shipment(to the Retailer) for the Week **16** is **9**
You have a backorder of **46** at the end of Week **16**
Current cost of Wholesaler : **2075**

PLEASE WAIT FOR ALL THE OTHER PARTNERS TO COMPLETE THEIR WEEKLY ORDERING AND SHIPPING POLICIES.
Once completed you will see a link in the bottom window to proceed to next week 17. Please click that to proceed.

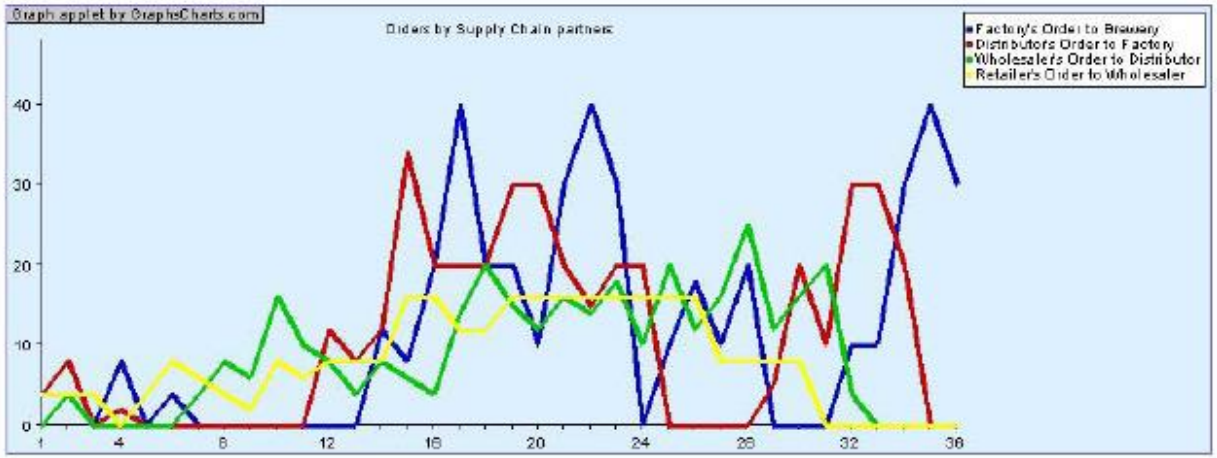
Let’s play!

Results

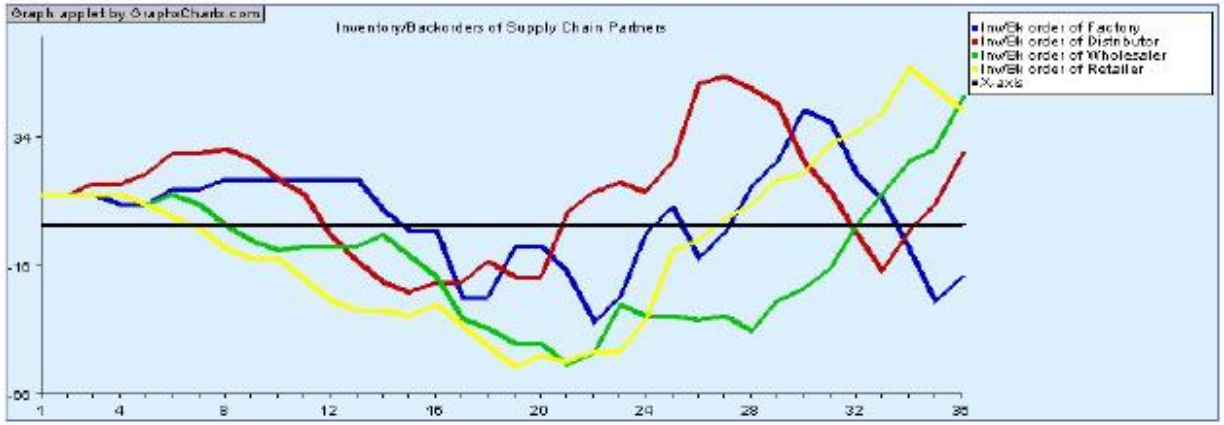
- Who should we blame??...
  - PC
  - Our supplier
  - Our customer
  - Final consumer
  - The whole team
  - The system…

Results

Supply Chain Partner's Order to Upstream players in Game 1 of Order (Y-axis) vs Week (X-axis)

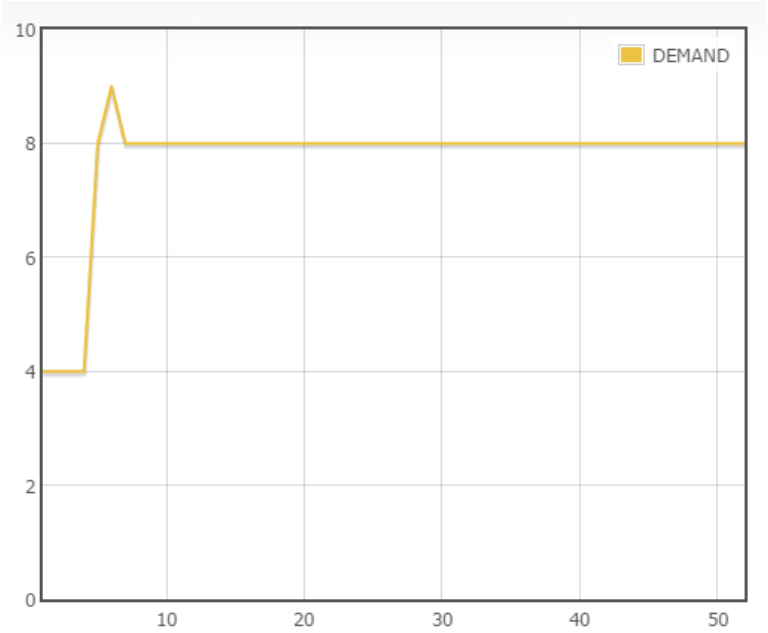


Inventory-Backorder Plots of Supply Chain partners in Game 1 of Inventory/Backorder (Y-axis) vs Week (X-axis)



Analysis of results

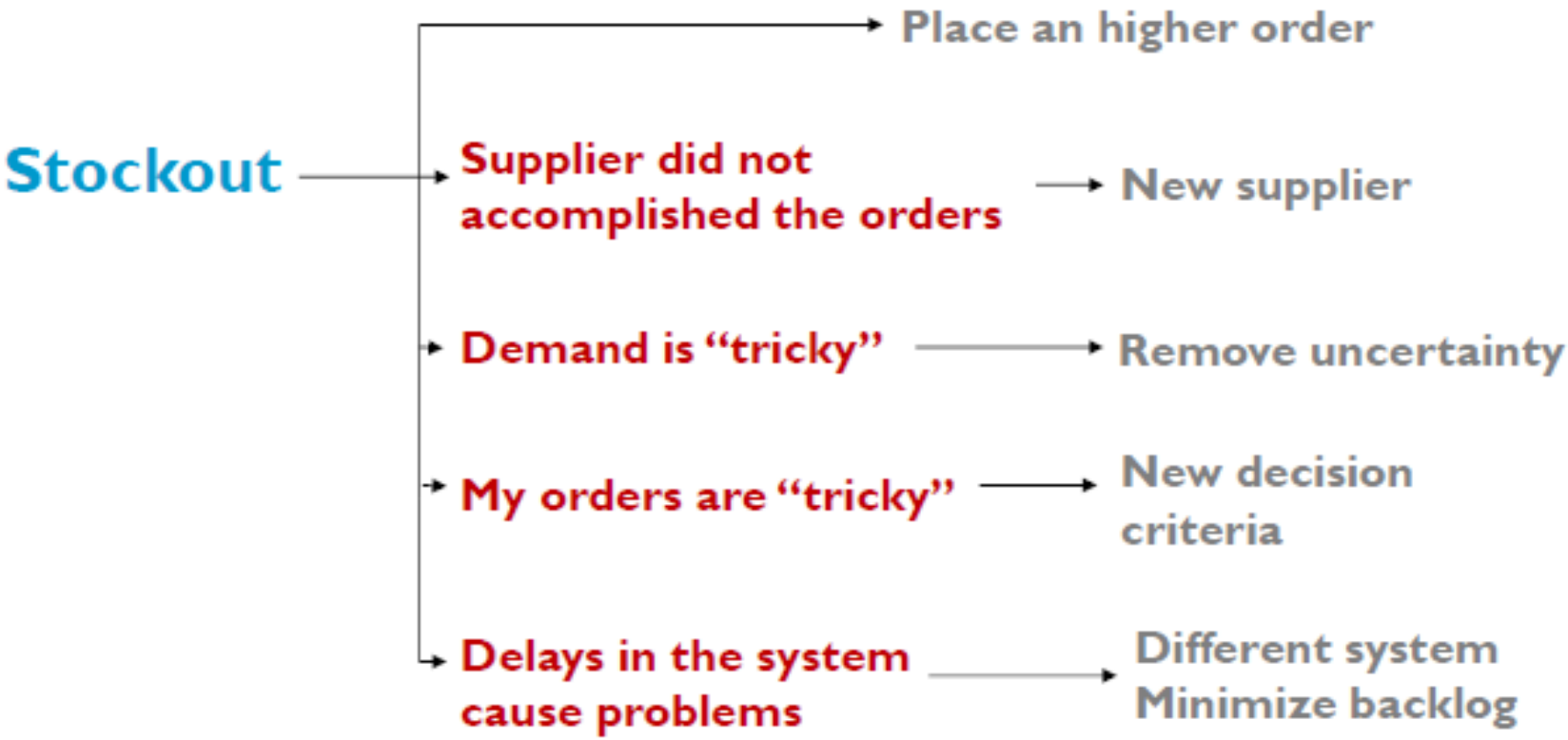
- What happened with final consumer demand?



Several thousands of game analysis show that even if not all players place the same orders, everyone react approximately at the same time.

Analysis of results

- What costs the most?



Conclusions

- Playing for…
  - Minimize costs;
  - Play a role in a system;
  - Networks and structures create behavior
- Results show:
  - Bullwhip Effect
  - The value of Information