The Beer Game

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The Beer Game

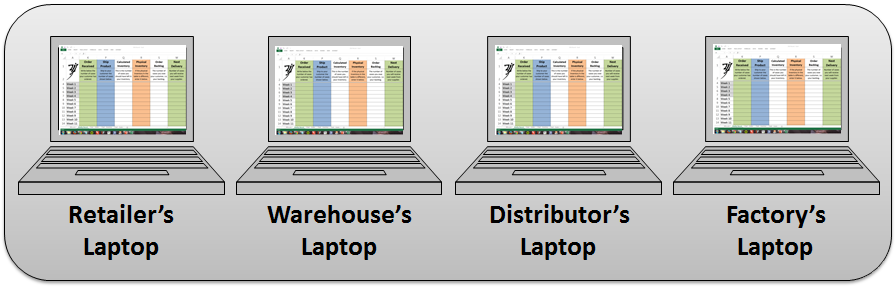
- The Beer Game was developed here at MIT
- 1960s by Jay Forrester in Sloan System Dynamics Group and study of industrial dynamics
- Played by 1,000s around the world, reflects many of the dynamics of supply chains
- But there is no beer…☹☹

Take your positions

Information Flow (Slips)

Material Flow (Chips)

Each entity of the SC (retailer, wholesaler, etc.) should have one laptop with the '**2017 Record**' Excel file open



Download it from

mcmxvi.com/beer.zip

Let's start…

- Agree with your table on a **name for your team**. It can be anything you want.
- Open the spreadsheet from beer.zip, and go to the sheet '**Who am I**'
- Complete the fields team name and your position in the team's supply chain.
- Save the file with a new name: ***Team-Position.xlsx***

  Note: Use "Save as"

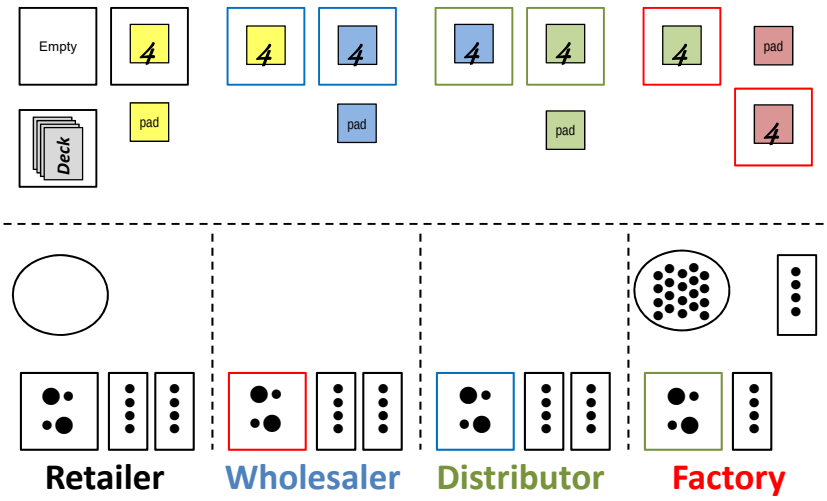
My Team's Name:

Stella Artois

My Position's Name:

Wholesaler

Let's take a look at the board



Chips & Slips

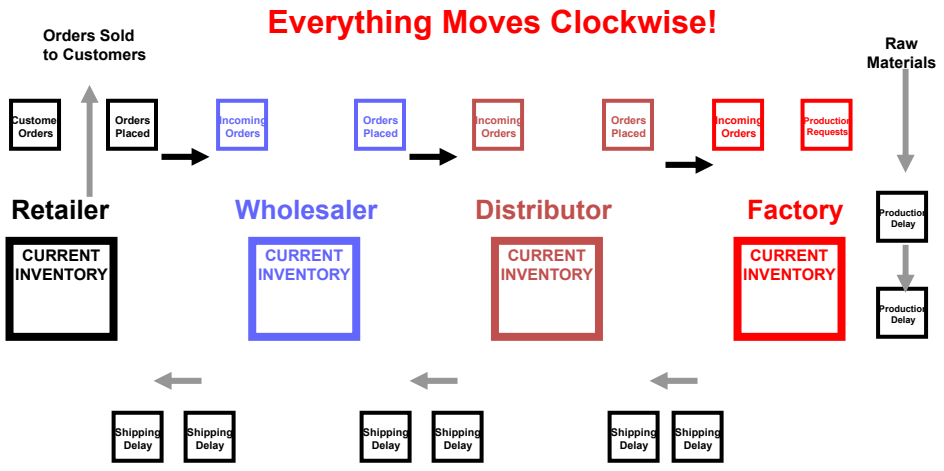
A deck of cards with the demand of the final consumer.
Only the Retailer sees the card, ***and tells nobody!***

- Chips are beer cases: small chip = 1 case, big chip = 5 cases

Post-its are for each position to write/place orders:

- 4 - Retailers order cases using the **yellow** post-its
- 4 - Wholesalers order cases using the **blue** post-its
- 4 - Distributors order cases using the **green** post-its
- 4 - Factory orders production using the **red** post-its

The mechanics



Chips (beer) moves from Factory to Customer

Slips (orders) move from Customer to Factory

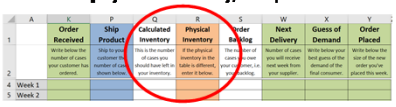
"Building the plane while flying it "

Let's first see the instructions…

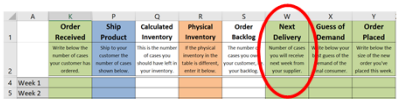
1. **Two-hand slide**.
2. **Check incoming order**. Record it in Column K.

3. **Ship to customer** cases shown in Column P.

4. **Count physical inventory**, compare to calculated.



5. **Count incoming cases.** Record in Column W.



6. **Guess this week's demand.** Record in Column X.

7. **Advance order slips. Factory brews.**
8. **Place order for your supplier (*your chosen amount*),** and record this in Column Y.

An easy recipe for trouble

If you want to make things harder for your team and create a lot of confusion, all you have to do is to:

- get ahead of the pack,
- or fall behind…

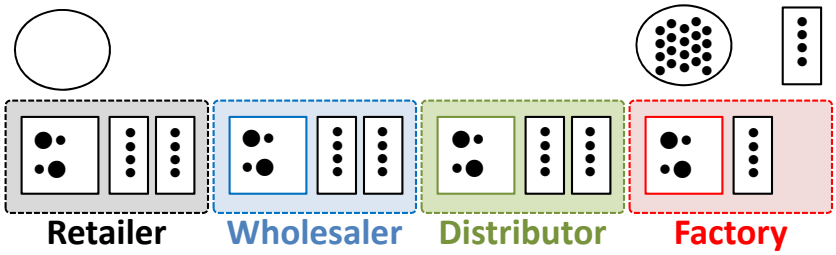
Nothing screws things up faster than a person playing the game at his/her own pace.

Our advice: **keep the pace and follow the lead of the facilitator**

Let's play…

1. Advance products in the pipeline

USE the advanced Miyagi technique
"**Two-hand CTL slide**"



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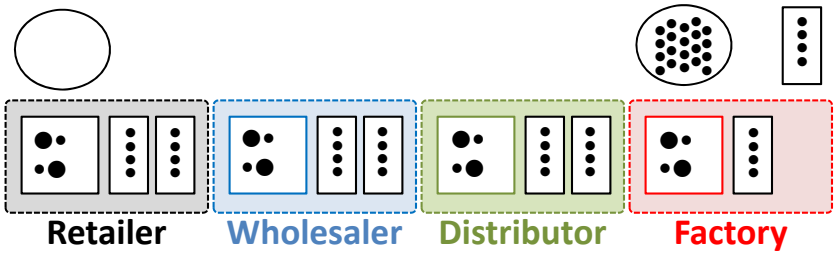
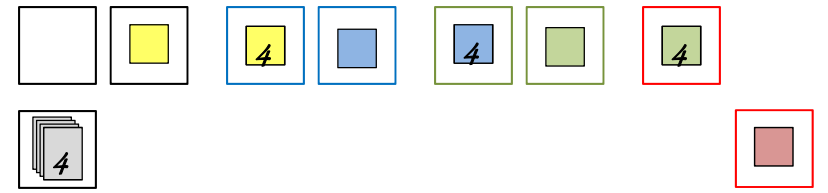


2. Check the order you have received from your customer



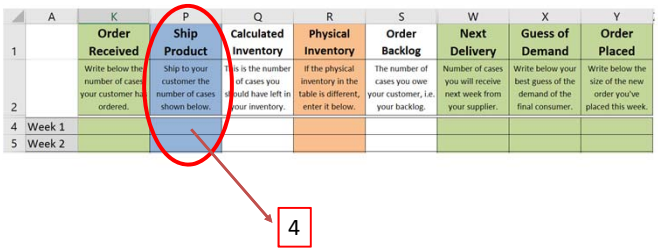
Retailer **Wholesaler** **Distributor** **Factory**

Record the order you received in **cell K4**

	A	K	P	Q	R	S	W	X	Y
1		Order Received	Ship Product	Calculated Inventory	Physical Inventory	Order Backlog	Next Delivery	Guess of Demand	Order Placed
2		Write below the number of cases your customer has ordered.	Ship to your customer the number of cases shown below.	This is the number of cases you should have left in your inventory.	If the physical inventory in the table is different, enter it below.	The number of cases you owe your customer, i.e. your backlog.	Number of cases you will receive next week from your supplier.	Write below your best guess of the demand of the final consumer.	Write below the size of the new order you've placed this week.
4	Week 1								
5	Week 2								

4

3. Read in cell P4 the number of cases you have to ship



	A	K	P	Q	R	S	W	X	Y
1		Order Received	Ship Product	Calculated Inventory	Physical Inventory	Order Backlog	Next Delivery	Guess of Demand	Order Placed
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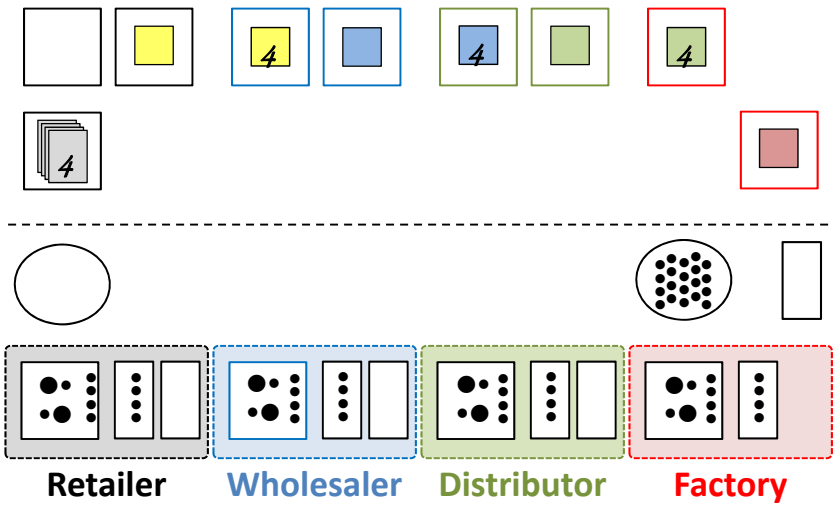
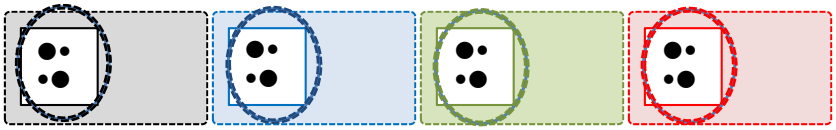
4	Week 1								
5	Week 2								

Ship these cases to your customer



4. Count how many chips you have in your **inventory** box



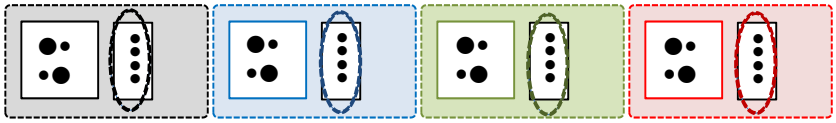
Retailer **Wholesaler** **Distributor** **Factory**

If the **physical inventory** is different from the **calculated inventory**, then enter the physical value in **cell R4**

	A	K	P	Q	R	S	W	X	Y
1		Order Received	Ship Product	Calculated Inventory	Physical Inventory	Order Backlog	Next Delivery	Guess of Demand	Order Placed
2		Write below the number of cases your customer has ordered.	Ship to your customer the number of cases shown below.	This is the number of cases you should have left in your inventory.	If the physical inventory in the table is different, enter it below.	The number of cases you owe your customer, i.e. your backlog.	Number of cases you will receive next week from your supplier.	Write below your best guess of the demand of the final consumer.	Write below the size of the new order you've placed this week.
4	Week 1								
5	Week 2								

12

5. Count how many cases **you will receive** from your supplier **next week**



Retailer **Wholesaler** **Distributor** **Factory**

Record this number in **cell W4**

	A	K	P	Q	R	S	W	X	Y
1		**Order Received**	**Ship Product**	**Calculated Inventory**	**Physical Inventory**	**Order Backlog**	**Next Delivery**	**Guess of Demand**	**Order Placed**
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4	Week 1								
5	Week 2								

4

6. Make an **educated guess** of the final **consumer demand**. Record it in **cell W4**

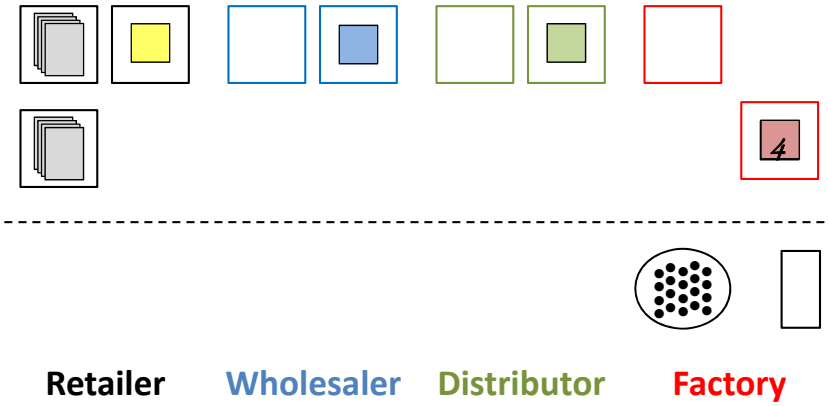
	A	K	P	Q	R	S	W	X	Y
1		Order Received	Ship Product	Calculated Inventory	Physical Inventory	Order Backlog	Next Delivery	Guess of Demand	Order Placed
2		Write below the number of cases your customer has ordered.	Ship to your customer the number of cases shown below.	This is the number of cases you should have left in your inventory.	If the physical inventory in the table is different, enter it below.	The number of cases you owe your customer, i.e. your backlog.	Number of cases you will receive next week from your supplier.	Write below your best guess of the demand of the final consumer.	Write below the size of the new order you've placed this week.
4	Week 1								
5	Week 2								

4

Make it fast and natural.

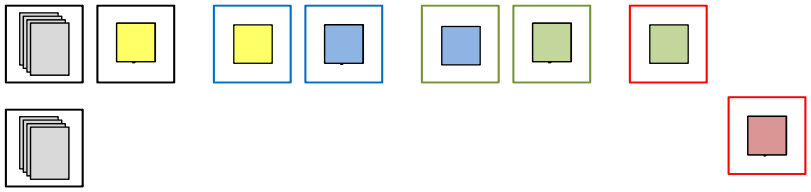
Take 5-10 seconds for this step

7. Retailer, Wholesaler and Distributor **advance their order slips**. Factory **brews** (i.e. put chips in box.)



8. **Place an order** for your supplier in a post-it note.

Note: Order 4 this time



Retailer **Wholesaler** **Distributor** **Factory**

Record your order in **cell Y4**

	A	K	P	Q	R	S	W	X	Y
1		**Order Received**	**Ship Product**	**Calculated Inventory**	**Physical Inventory**	**Order Backlog**	**Next Delivery**	**Guess of Demand**	**Order Placed**
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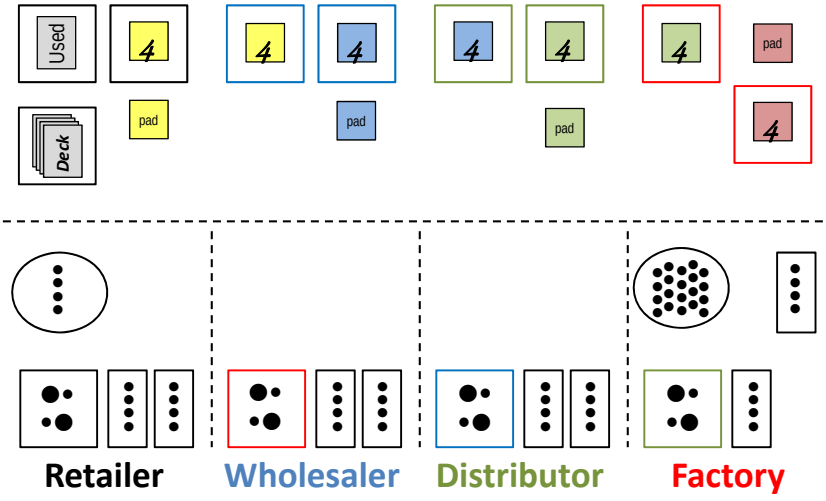
4

At the end of week 1, the board should look exactly as it was at the start



…and your Excel sheet should look like this one below:

	Order Received	Ship Product	Calculated Inventory	Physical Inventory	Order Backlog	Next Delivery	Guess of Demand	Order Placed
	Write below the number of cases your customer has ordered.	Ship to your customer the number of cases shown below.	This is the number of cases you should have left in your inventory.	If the physical inventory in the table is different, enter it below.	The number of cases you owe your customer, i.e. your backlog.	Number of cases you will receive next week from your supplier.	Write below your best guess of the demand of the final consumer.	Write below the size of the new order you've placed this week.
Week 1	4	4	12		0	4	4	4

Let's reinforce by doing Week 2!

A bit faster this time!

Objective of the Beer Game

Teams compete against each other. The team with the lowest overall cost wins the game. We will run the game for 52 weeks.

The overall cost of a team is the sum of the costs of the four entities of the SC of that team.

The cost of each entity is the sum of the **inventory holding cost ($0.50/case/week)**, **backlog cost ($1/case/week)**, and **lost inventory cost ($24/case)**.

Some things to keep in mind

- You don't know future demand
- You will get what you order,
- No order cancellations, no expediting
- Retailers – **do not reveal your customer order deck**
- You can **only speak with the fellow in front of you**. You cannot speak with those right or left. There is no collaboration across positions!
- PLEASE DON'T WRITE ON THE GAME BOARD!
- From Week 5 and forward, you **decide what to order**. You only have **5-10 seconds**… stay focused!

An easy recipe for trouble

If you want to make things harder for your team and create a lot of confusion, all you have to do is to:

- get ahead of the pack,
- or fall behind…

Nothing screws things up faster than a person playing the game at his/her own pace.

Our advice: **keep the pace and follow the lead of the facilitator**

Remember….

The Beer Game is Just a Game, so enjoy it! ☺