The Beer Game

Instructions for the Facilitator of the game

Please watch this presentation in slideshow mode
About these instructions

After we bought the game, we followed the instructions that came with it, and run a pilot. Then we realized that there was some information missing in the original instructions about how to play the game smoothly.

We also made some changes to increase the friendliness of the game for the audiences we are targeting with the EICCD Logistics & Supply Chain Program. This is why we wrote this unofficial beer game manual.

The first part of this manual presents information that you should know as the facilitator of the game, the second part has the instructions that you must share with participants to have a smooth game.

Please do not disclose to player more than the indicated information, to get the adequate learning effect.

About the creators of the game

“The Beer Game is a role-playing simulation developed at Massachusetts Institute of Technology (MIT) in the 1960's to clarify the advantages of taking an integrated approach to managing the supply chain; it particularly demonstrates the value of sharing information across the various supply chain components.”

Source: http://beergame.mit.edu/guide.htm
About the game

• This game represents a simplified beer supply chain (single retailer, single wholesaler, single distributor, single factory)

• The factory has unlimited raw materials and the other parts of the supply chain have unlimited storage capacity

• Each “round” in the game will represent a week in the business supply chain

• Each week customers buy beer from the retailer’s inventory (quantity of consumer demand is determined by the game itself — cards).

• Retailers are the only ones who know what the customers actually order (they should not reveal this information to anyone else.)

• Each member of the supply chain, each week, receives a shipment from their supplier and each member places and order with their supplier.

Let’s see how the empty board looks like ...
Initializing the board

- Put the cards in order with side that reads the week # facing up in the board place labeled “Order Cards” (week 1 on the top)

- Put 12 chips in each of the four boxes labeled “Current Inventory”

- Put 4 chips in each of the six boxes labeled “Shipping Delay”

- Put 4 chips in each of the two boxes labeled “Production Delay”

- Use the small papers to write the initial orders.

  All the time the papers with the orders, need to be put with the number facing down.

  (In this presentation in the slide about Initialization of the board they appear visible to help the facilitator to understand better)

  The colors also correspond to each part of the supply chain:
  - Retailer  →  Gray paper
  - Wholesaler  →  Blue paper
  - Distributor  →  Green paper
  - Production  →  Pink paper
Initializing the board

• For initialization all the orders boxes & production request box must have the #4 written in the order (colored paper) and facing the number down.

• The color of the paper for the orders is important because avoid confusions. If you run out of the color paper that the game came with, you can cut your own papers. You can cut regular color paper or cut the sticky pat of color small post its and use the rest.

• Setting up the game might take around 30 minutes (including making the photocopies)

• See a graphic representation of the initialized board in the next page
Overview of the game – for the facilitator:

• There are delays built into the system. Each week shipments are placed into shipment delay 1, and then the following week they are moved to shipment delay 2 where they remain until they are received next week by their respective customer. Orders also have a two week lag built into the system. The result of these built-in delays is **four week lead time** from when an order is placed until it is received.

• The players in each part of the supply chain cannot talk among themselves (i.e. warehouse cannot talk to distribution). Their “communications” are through placing orders and receiving shipments.

• **The objective of the game is meet the customer demand** with minimal expenditure of back orders and **carrying as less inventory as possible**.

• Stockouts (orders which cannot be filled) become backorders and must eventually be filled.

• Each member of the channel is charged $1.00 for each case of beer stocked out and $0.50 for each case of beer carried in inventory in excess.

Overview of the game – for the facilitator:

• Because stock out costs are higher than inventory carrying costs there is an incentive to service demand from inventory rather than through backorders.

• Backorders are cumulative and must be filled eventually when stock is available.

• There are not lost sales due stock outs

• Participants are told that the winner of the game is the one with lowest total cost at the end of the game. The only decision participants must make is how much to order.

• The game is initialized in a balanced condition.
You will see that the steps are pretty similar along the game

1. You receive goods from the supplier
2. You receive orders from your customer
3. You deliver to your customer as ordered
4. You order new goods to your supplier

**NOTE:** It might be slightly different in the first round

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**EICCD customization of the game**

- In the original version the shipment delays boxes are empty, in EICCD we adopted a variation that we found in the internet and have drawn a truck and a train in the shipping delay boxes, to justify the delays due different types of transportation.

- In the original version, each position is requested to put both hands of the player to the right of the inventory box, in EICCD we will ask to help with one hand in the left (simulating that you ensure your product is advancing to your client), and one hand to the right (simulating that you are receiving the merchandise).

- In the original version each position (do the receiving merchandise, fulfilling their customer’s order AND requesting product to their supplier in the same “round”, in EICCD we will do “receiving merchandise & fulfilling their customer’s order” in one “round” and then all the participants will place the orders in another “round” but all of these will happen

- In EICCD we will display the week we are in a wall
Let’s see how the **retailer** will play

1. Receive cases from 2nd shipping delay to its (retailer’s) inventory
2. Pick a card to see how many cases the customer wants (customer orders)
3. See the number (do not share with the rest of the supply chain)
4. Put the card facing down in the designated place
5. Fulfill customer order (put chips over the orders sold to customers)
Let’s see how the wholesaler will play

1. Move cases from 1st shipping delay to 2nd shipping delay on the LEFT (in the direction from wholesaler to retailer)
2. Receive cases from 2nd shipping delay to its (wholesaler’s) inventory
3. Pick the incoming order to see how much was ordered by the retailer
4. See the number (don’t share with the rest)
5. Put the paper facing down under the game board
6. “Ship” the order to the retailer, moving the cases to the 2nd shipping delay on the left
Let’s see how the distributor will play

1. Move cases from 1st shipping delay 2nd shipping delay on the LEFT (in the direction from the distributor to the wholesaler)
2. Receive cases from 2nd shipping delay to its (distributor’s) inventory
3. Pick the incoming order to see how much was ordered by the wholesaler
4. See the number (don’t share with the rest)
5. Put the paper facing down under the game board
6. “Ship” the order to the wholesaler, moving the cases to the 2nd shipping delay on the left
Let’s see how the **factory** will play

1. Move cases from 1st shipping delay 2nd shipping delay on the LEFT (in the direction from the factory to the distributor)
2. Receive cases from 2nd production delay to its inventory
3. Help to advance inventory with the factory area from 1st production delay 2nd production delay space
4. Pick the incoming order to see how much was ordered by the distributor
5. See the number (don’t share with the rest)
6. Put the paper facing down under the game board
7. “Ship” the order to the distributor, moving the cases to the 2nd shipping delay on the left

*Note: this first week for the factory is different to the following weeks*
Now ... everybody place their others!

The steps are pretty similar along the game

• Retailer, wholesaler and advance its orders to the empty spaces to the right

• Factory pick production request, see the number (don’t share with others), take that number of chips from their unlimited raw materials bin, and put them in the 1st production delay box

• Every position (retailer, wholesaler, distributor AND factory) write their orders in paper slips of the colors that corresponds to each one:
  
  Retailer → Gray paper
  Wholesaler → Blue paper
  Distributor → Green paper
  Production → Pink paper

  and put their orders in the empty “orders placed” space. The factory will put its order in the “production request” space.

LET’S SEE THE ANIMATION OF THESE STEPS ...
Lessons Learned administering the game:

- Cccc
- mmmm

References