



Welcome to the Beer Game!

Shell Best in Class Chemicals
Supply Chain Series
Wednesday, November 16, 2016

The Beer Game

- Good news and bad news
 - The good news is...
 - The Beer Game was developed here at MIT in the 1960s by Jay Forrester in Sloan System Dynamics Group
 - Played by 1,000s around the world, reflects many of the dynamics of supply chains
 - The bad news is...
 - There is no beer
- Has anyone played before?

The Beer Game

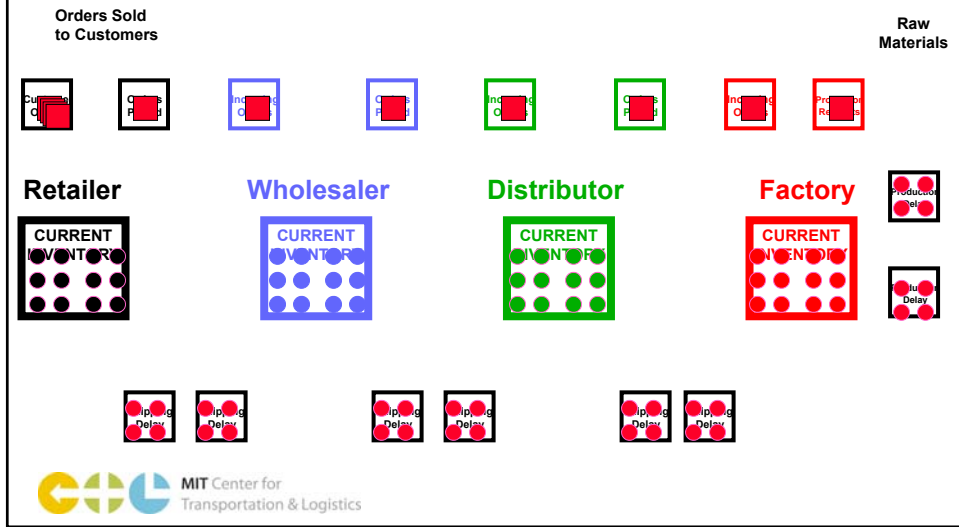
Interactive management exercise intended to:

- Demonstrate common practices in supply chains
- Demonstrate common problems in supply chains
- Develop insights into better supply chain solutions

The Beer Game Overview

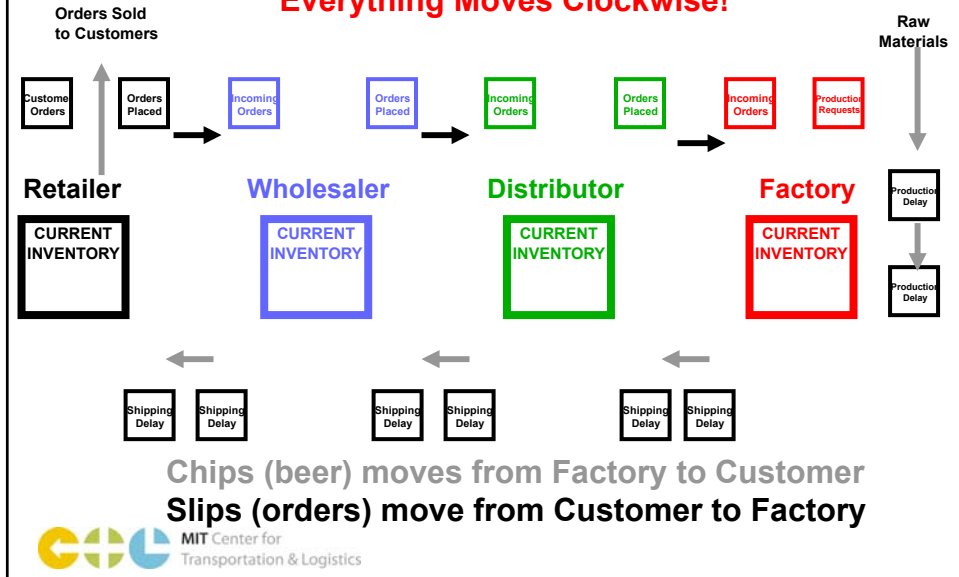
- Each table is one supply chain
- There are 4 positions in each chain
Retail, Wholesale, Distributor, Factory
- The team with the lowest total cost wins!
 - Inventory: \$0.50 per case, each week
 - Backlog: \$1.00 per case, each week

The Beer Game With Initial Inventory and Orders



The Beer Game – The Table

Everything Moves Clockwise!



The Beer Game Details

- **Each position starts with inventory & orders in pipeline**
 - Red bingo chips
 - Pre-written order slips
- **Chip value**
 - 1 bingo chip = 1 case of beer
 - 1 poker chip = 10 cases of beer
- **Some things to remember:**
 - You don't know future demand
 - What you order, you will get
 - No order cancellations, no expediting
 - No calling out to find out order pattern
 - Retailers – do not reveal your customer order deck
 - Only collaborate with partner – not with other positions

PLEASE DON'T WRITE ON THE GAME TABLE!

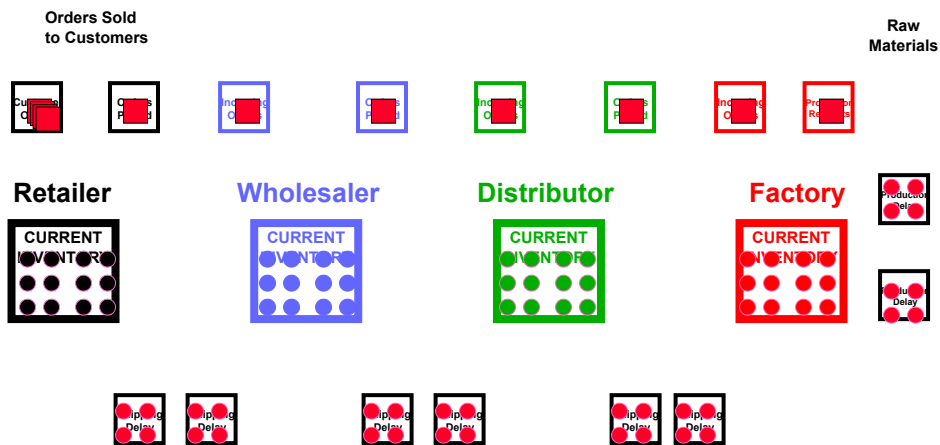
Plan for the Session

- **Overview**
- **Play the Game**
 - We will simulate an entire year
 - Each period is a week
 - Track orders, inventory, & backlogs
- **End of Game Tasks**
 - Add up your score
 - Plot your orders
 - Plot your inventory
 - Plot your estimate of customer orders
- **Debrief**

Remember....

The Beer Game is Just a Game

The Beer Game With Initial Inventory and Orders

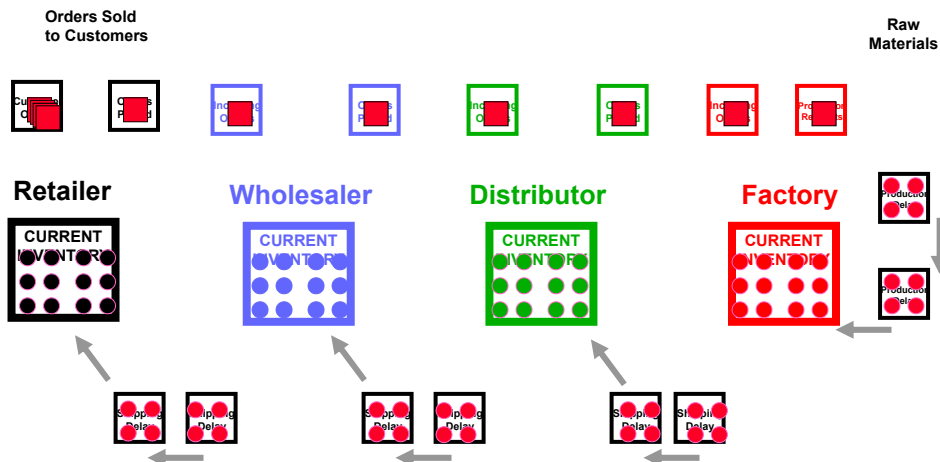


The Steps of the Game

1. Receive inventory. Advance shipping & production.
2. Check incoming orders and fill them.
3. Record inventory position.
4. Advance the order slips. Factory brews.
5. Place and record your new order.

1. Receive inventory. Advance shipping & production

The Beer Game



A Suggestion....

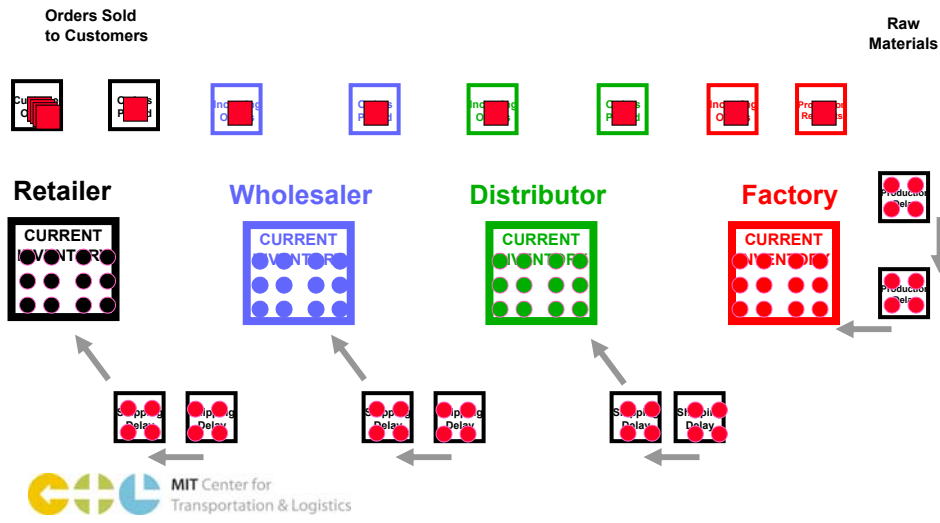
Use the Two-Handed CTL Slide

to receive inventory, advance shipping and production (#1)



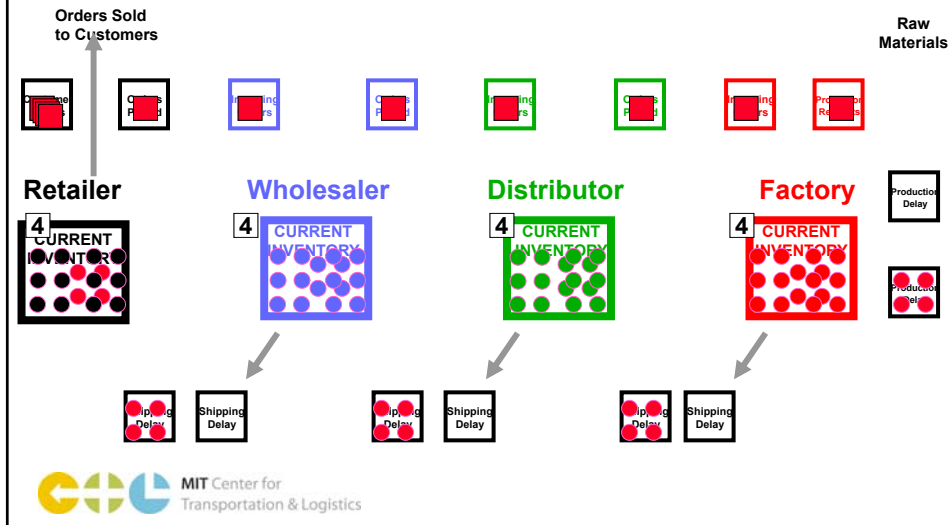
1. Receive inventory. Advance shipping & production

The Beer Game



2. Check incoming orders and fill them.

The Beer Game



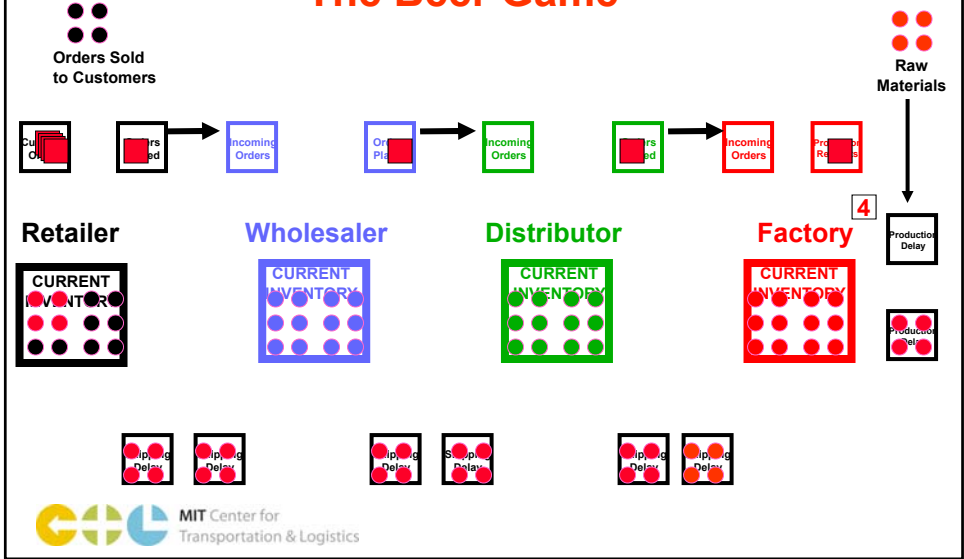
3. Record inventory position on Record Sheet

Record Sheet

Week	Inventory	Backlog	Orders You Place
1	12	0	4
2	12	0	4
3	12	0	4
4	12	0	...
5			

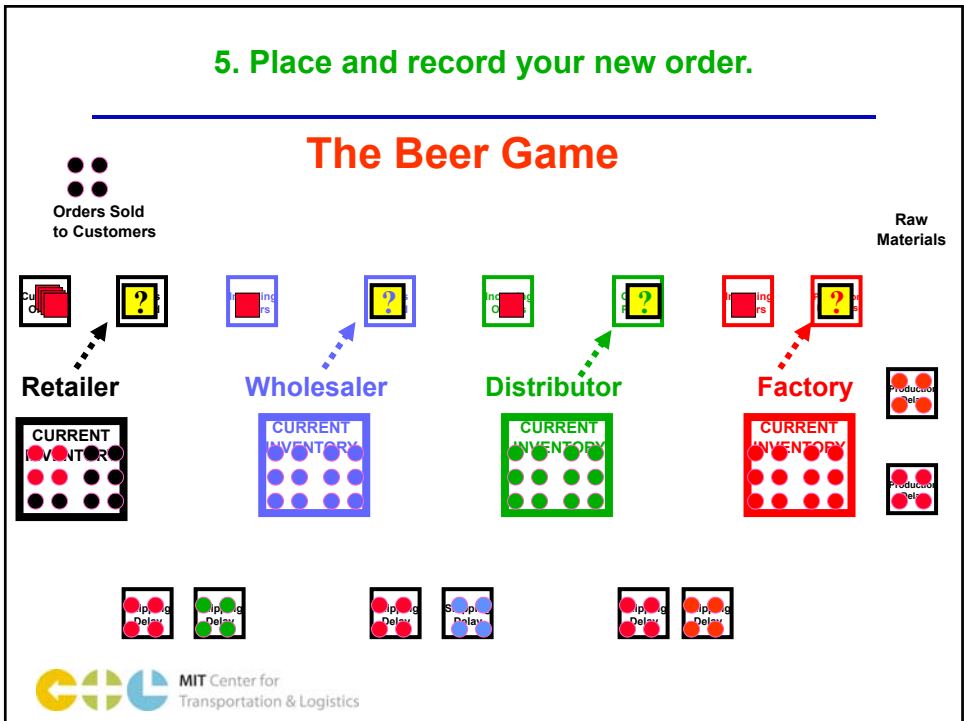
4. Advance the order slips. Factory brews.
 (Factory takes Production Request & puts invty into Production Delay)

The Beer Game



5. Place and record your new order.

The Beer Game



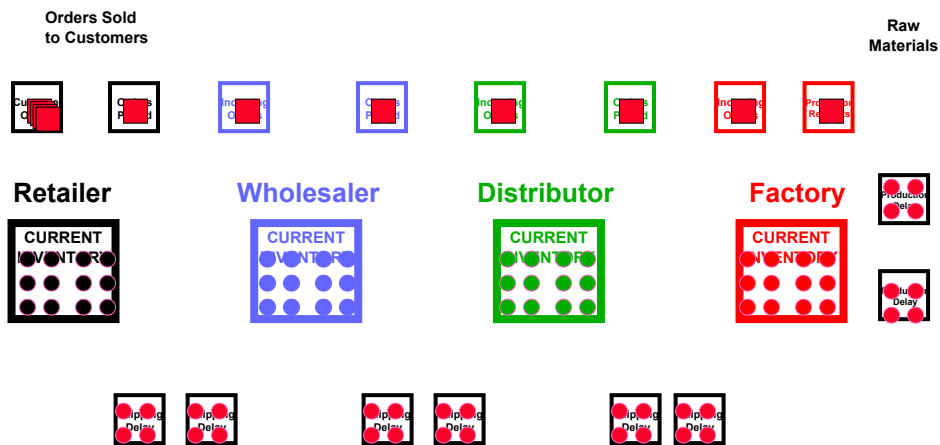
Suggestions....

Stick to your own colors.

Move 'orders placed' slip into downstream 'incoming orders' box
Don't take 'orders placed' slip from downstream customer

**“Pull Chips & Push Slips”
Everything Moves Clockwise!**

Back to the original state



The Steps of the Game

- | | |
|--|---|
| Chips | 1. Receive inventory. Advance shipping & production. |
| Slips and Chips | 2. Check incoming order slip and fill orders. <ul style="list-style-type: none"> • Remove the incoming order slip. |
| Dist/Whole/Retailer:
Slips
Factory: Slips & Chips | 3. Record inventory position. <ul style="list-style-type: none"> • Note backlog as negative. |
| Place Order Slip | 4. Advance remaining order slips. Factory brews. <ul style="list-style-type: none"> • Factory takes Production Request and puts inventory into Production Delay box. • Remove production request slip. |
| | 5. Place and record your new order. <ul style="list-style-type: none"> • Factory places production request on itself. |



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Record Sheet – After Wks 1-4

Week	Inventory	Backlog	Orders You Place
1	12	0	4
2	12	0	4
3	12	0	4
4	12	0	4



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If your orders > inventory....

- **You have an effective “Orders to Fill”**
 - You must fill all orders
 - Orders to fill = Current Orders + Backlog
- **If you don't have enough inventory**
 - Ship all the inventory you do have
 - Record the remaining “orders to fill” as your new backlog
 - Backlog is cumulative, example:
 - In week 10, you have 5 units in inventory, and get an order for 8 units. Your backlog is now 3.
 - In week 11, you get no new inventory and an order for 5. Your backlog is now 8, not 5!
 - In week 12, you get 15 units delivered and an order of 3. You satisfy your backlog of 8 and your order of 3 and now have an inventory of 4.
- **If you have enough inventory**
 - Ship all the “orders to fill”, and record your new inventory position.

Record Sheet – What's wrong here?

Week	Inventory	Backlog	Orders You Place
1	12	0	4
2	12	0	9
...
14	0	12	12
15	5	6	?

- Backlog is cumulative
- Always use inventory to reduce backlog

Before we start....

1. Take two minutes to come up with a name for your team's beer
2. Want to make it interesting?.....

Week 1

1. Receive inventory. Advance shipping & production.

2. Check incoming order slip and fill orders.

- Remove the incoming order slip.

3. Record inventory position.

- Note backlog as negative.

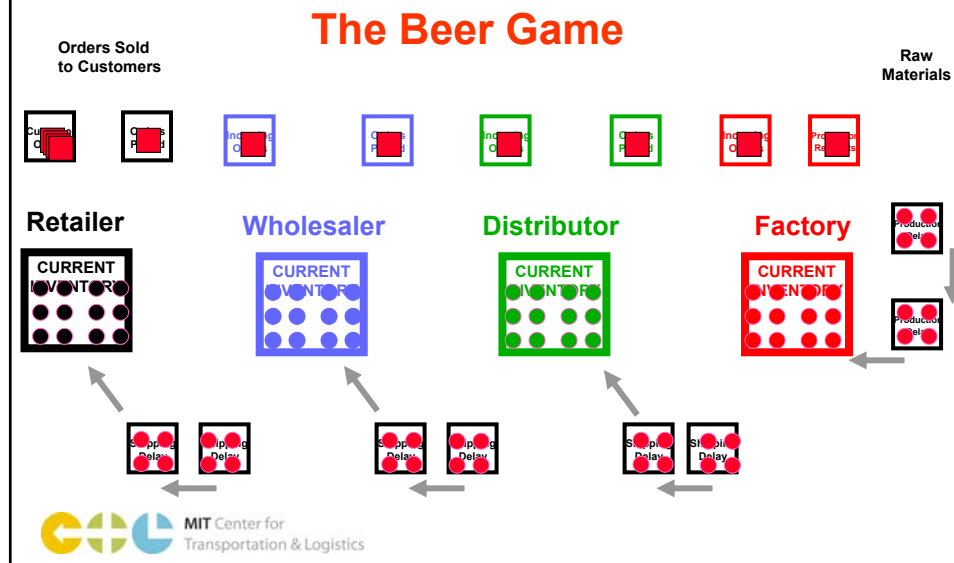
4. Advance the remaining order slips. Factory brews.

- Factory takes Production Request and puts inventory into Production Delay box.
- Remove production request slip.

5. Place and record your new order.

- Factory places production request on itself.

1. Receive inventory. Advance shipping & production



Week 1

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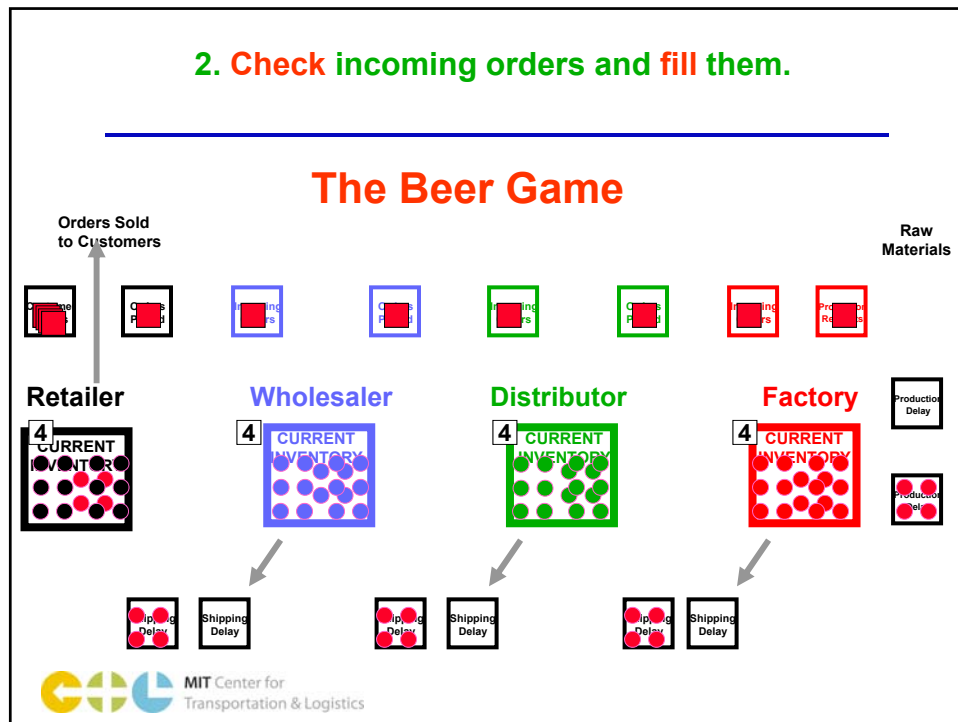
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- Factory places production request on itself.

2. Check incoming orders and fill them.



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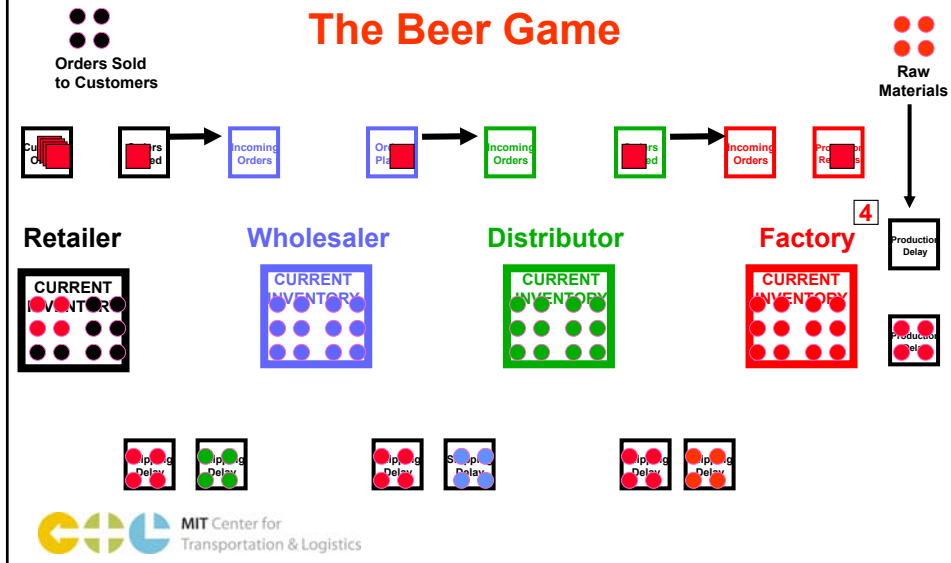
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Remove production request slip.

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Factory places production request on itself.

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