THE BEER GAME
SUMMARY OF THE RULES

• “Practicing foul shots” for management
• Each move represents a week
• Competitive-cooperative game, with limits on cooperation
  — You work with a partner
  — You can’t talk to the rest of your team
• Objective: Run the minimum-cost distribution system
  — Each unit of inventory: $0.50 per week
  — Each unit of backlog: $1.00 per week
  — Costs are cumulative over time
  — Team with the lowest total cumulative cost wins
PRELIMINARIES

- Introduce yourself to your team members
- Pick a team name
- Record your team name and position on your GAME RECORD
HINTS ON PLAYING

- You can’t look ahead at orders
- Stay in step with me and your team
- One partner move the pieces, and one partner record on the GAME RECORD
- You receive orders and ship “downstream”
  - After you fill an order, slide the order slip under the board
  - Your customers will wait forever, but it costs you (backlog)
- You place orders and receive from “upstream”
  - It takes time for orders to reach your supplier and for shipments to reach you
- The Factory position is a little different
STEPS OF THE GAME
[Repeat each week]

1. Receive inventory and advance shipping delays
   (Factories advance production delays)

2. Look at your incoming orders and fill them
   — Fill incoming orders PLUS orders in backlog
   — If you don’t have enough inventory, ship as much as you can and add the rest to your backlog

3. Record your inventory or backlog

4. Advance the order slips and factories brew
   (Factories introduce production requests from last week into the production delay)

5. Place and record your orders
   (Factories place and record production requests)
CALCULATING BACKLOG

Last week’s backlog

+ New orders

= Orders to fill

- Amount shipped

= This week’s backlog
RETAILERS:

PLEASE DON’T TELL WHAT THE CUSTOMER ORDERS WERE
CALCULATE GAME STATISTICS

1. Calculate your score
   — Total your inventory
   — Total your backlog
   — Calculate your total cost

2. Plot your inventory or backlog

3. All positions except Retailer:
   Plot estimated retail customer orders

4. Retailer: Calculate your total team score
DEBRIEFING
HOW DID YOU FEEL?

• Did you feel
  — Calm?
  — Collected?
  — In control?

• OR, did you feel a little
  — Frazzled?
  — Frustrated?
  — At the mercy of events?
WHAT ABOUT YOUR TEAMMATES?

- Do you think they
  - Showed great skill?
  - Had your best interests at heart?

- OR maybe you think they
  - Fouled up?
HOW YOU DID
WHAT WOULD HAPPEN IN THE REAL WORLD WITH THIS KIND OF PERFORMANCE?
RESULTS OF THE BEER GAME

- Performance of teams is always poor
  - Average costs are about $2,000
  - The best possible cost is about $200
    [A factor of 10 improvement is possible!]

- Similar patterns always occur,
  even though very different people play

- Our deeply embedded ‘mental models’ interact
  with the structure of the system
  - The result is a poor outcome
  - Furthermore, it is hard to learn to do better
HOW COULD YOU REDUCE COSTS IN THE BEER GAME?

- Improve information flows
  — When is this feasible?
- Improve forecasting
  — Will your forecasts be self fulfilling?
- Eliminate the wholesaler and distributor
  — What are the implications of this?
- Improve ordering policies
  — Could you be replaced by a computer?
CONSIDER AN ANCIENT GREEK TRANSPORTED TO OUR TIME

- Our science and technology has advanced so far as to seem like magic

- Our social and management structures would appear familiar
  — Why the lack of progress?
LESSONS OF THE BEER GAME

- The structure of our management processes creates their behavior
  - Changing the people without changing the structure doesn’t improve things permanently

- Therefore, the highest leverage lies in redesigning the structure of a process

- Systems thinking is essential for effective redesign
  - The cause of a problem is often distant in time and space from the symptoms
  - Impacts of structural changes cross organizational and functional boundaries