Building a General Business Case

Yun Kang, Ph.D. Candidate
Auto-ID Center
Massachusetts Institute of Technology

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Benefits are many …

Managing and Controlling Promotions

Reduced Product Shrinkage

Better Planning

Automatic Checkout

Accurate Inbound Freight Verification

Reduced Stockout

Inventory Reduction

Faster Receiving

Theft Prevention

Accurate Order Fulfillment

Increased Production Responsiveness

Automated Inventory Counting

Greater Production Flexibility

Shorter Order Fulfillment Leadtime

Produce-to-Real-Time-Demand

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Types of benefits

Revenue vs. Cost

Internal vs. External

Easy to quantify vs. Hard to quantify

All benefits must translate into ROI!

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Yet to be quantified…

- Inventory reduction due to demand and supply visibility
- Faster and more accurate order fulfillment
- Greater order fulfillment flexibility
- Production flexibility
- Produce-to-real-time-demand
- Real-time control of promotions
- …

Most of the benefits are SC-integration-related!

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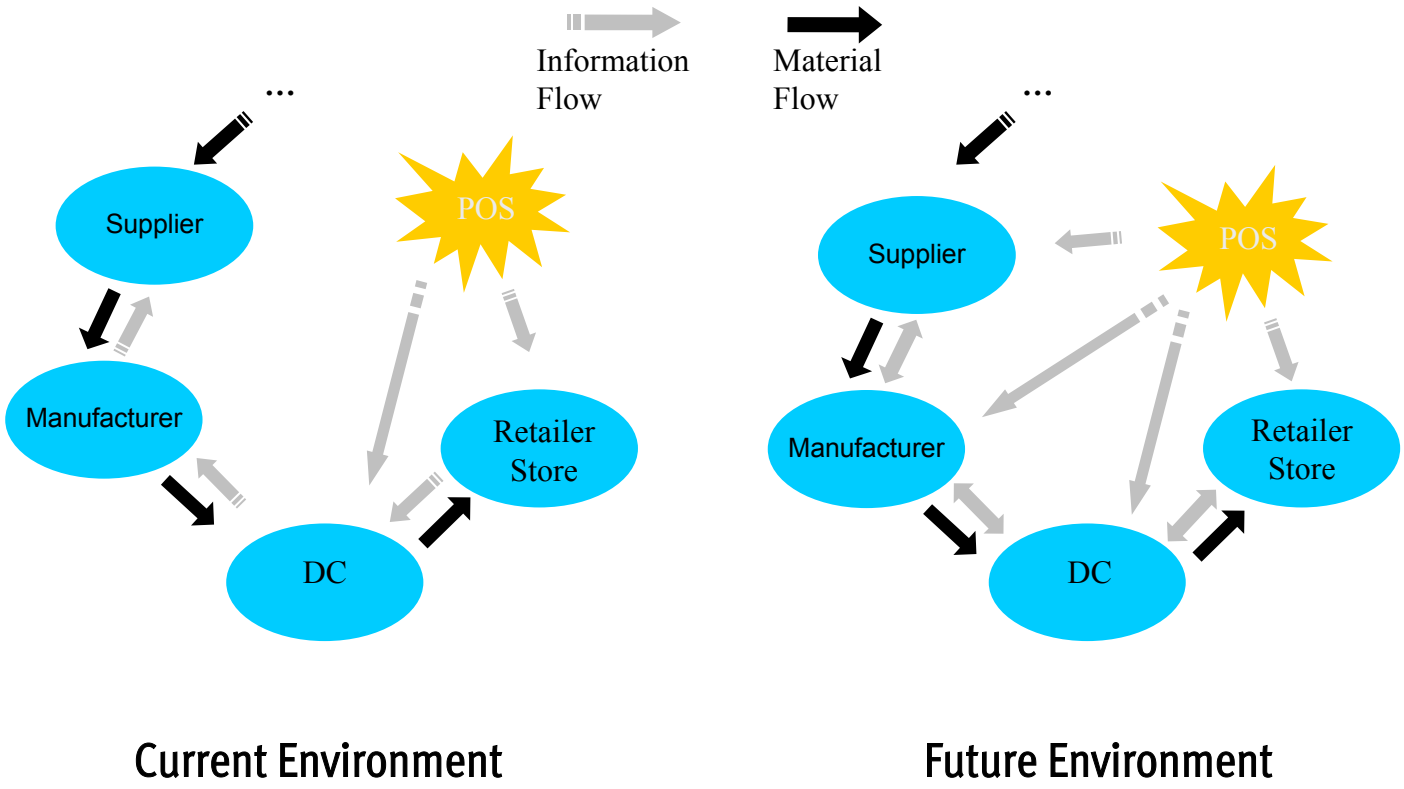
Supply chain integration



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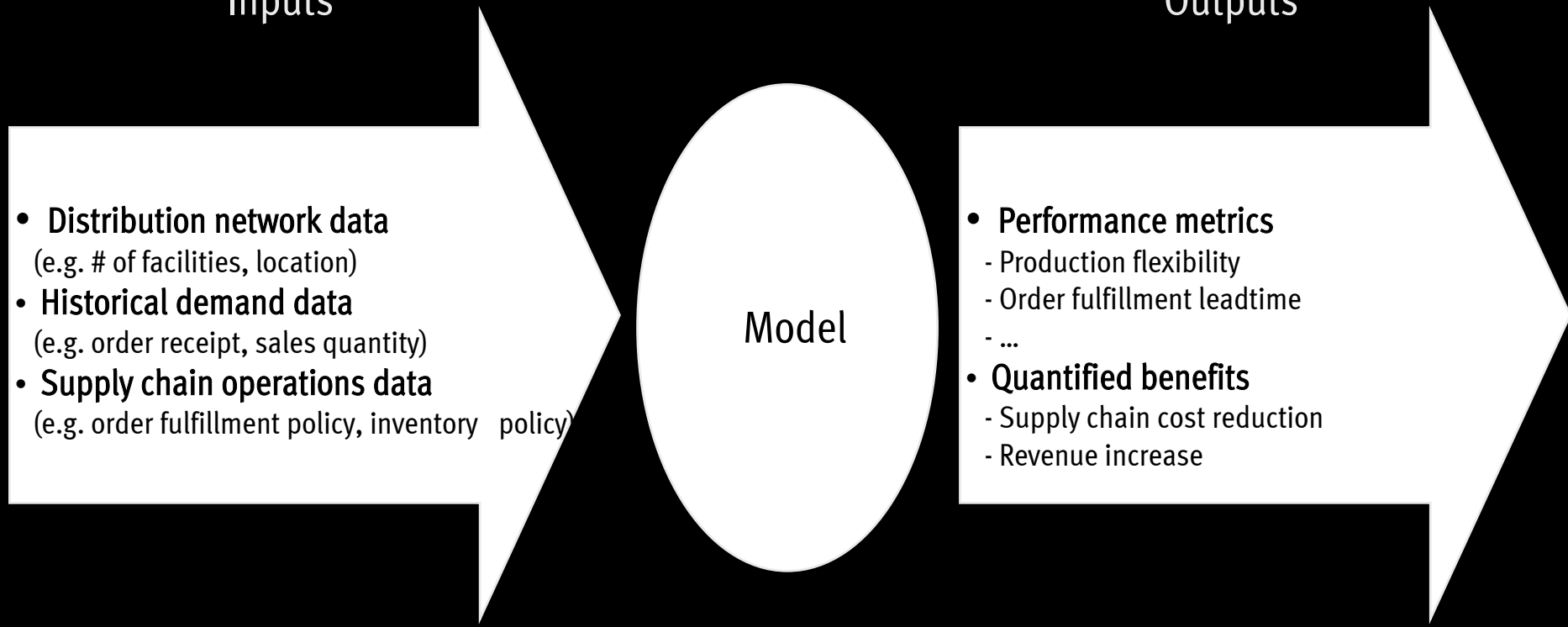
So how do we quantify these?

Build a Simulation Model!



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What else can simulation do for us?

- Allow quantification of benefits involving complex dynamics
- Perform sensitivity analysis
  - Helps make right business decisions
- Define standard performance metrics
- Ties in with the town test
- Bring SC partners together and work out integration issues
- Brings academics and industry together

- Build a generic, company-independent model

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Action items

- Determine what to model
  - Choose partnering companies for initial model
  - Choose product family
- Conduct field visits
  - Learn SC operations
  - Gather data
- Build model, simulate, and present the findings

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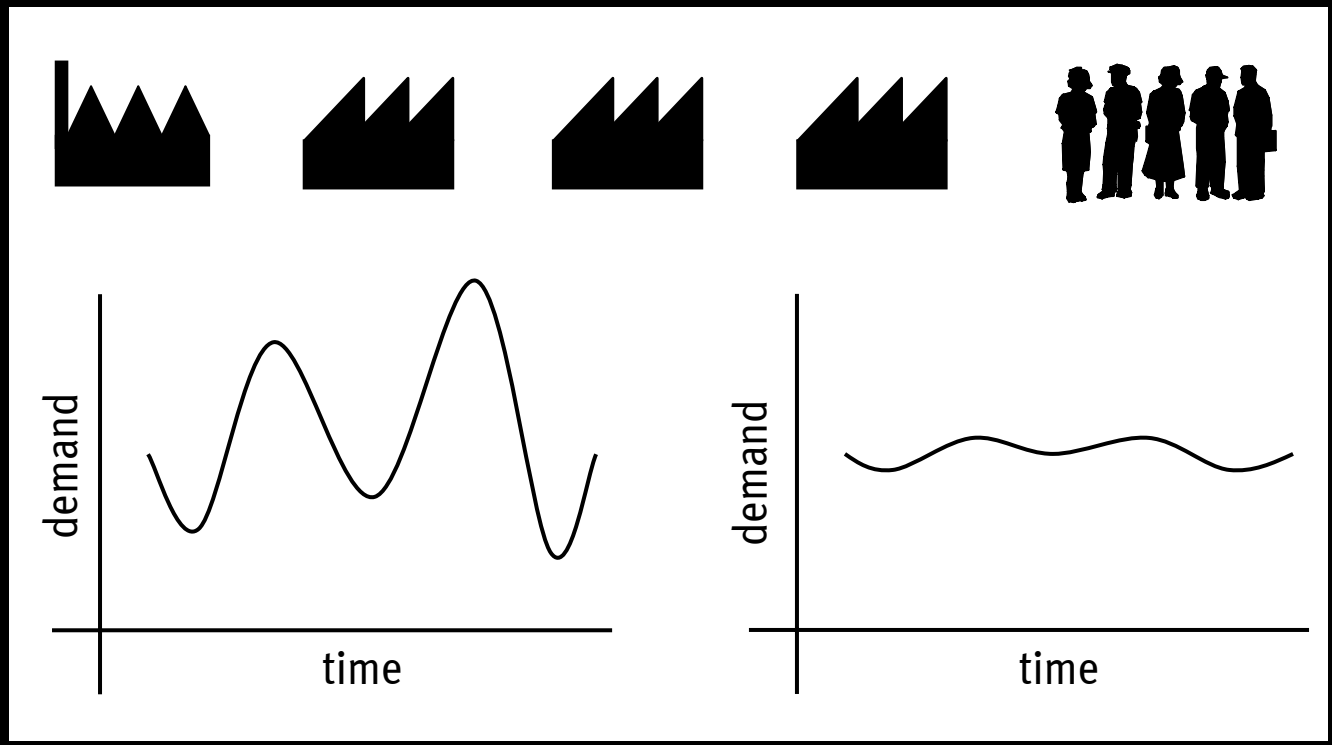
THE BULL-WHIP EFFECT



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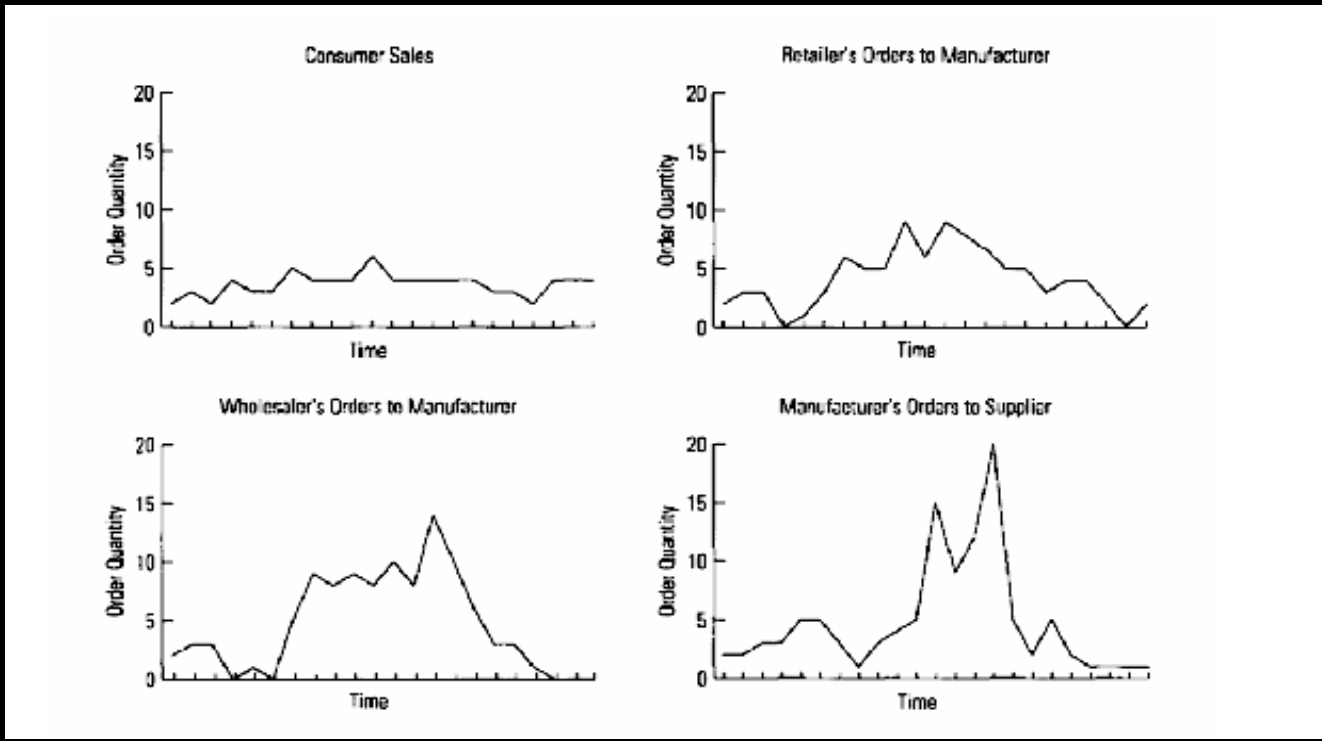
THE BULL-WHIP IN REAL LIFE



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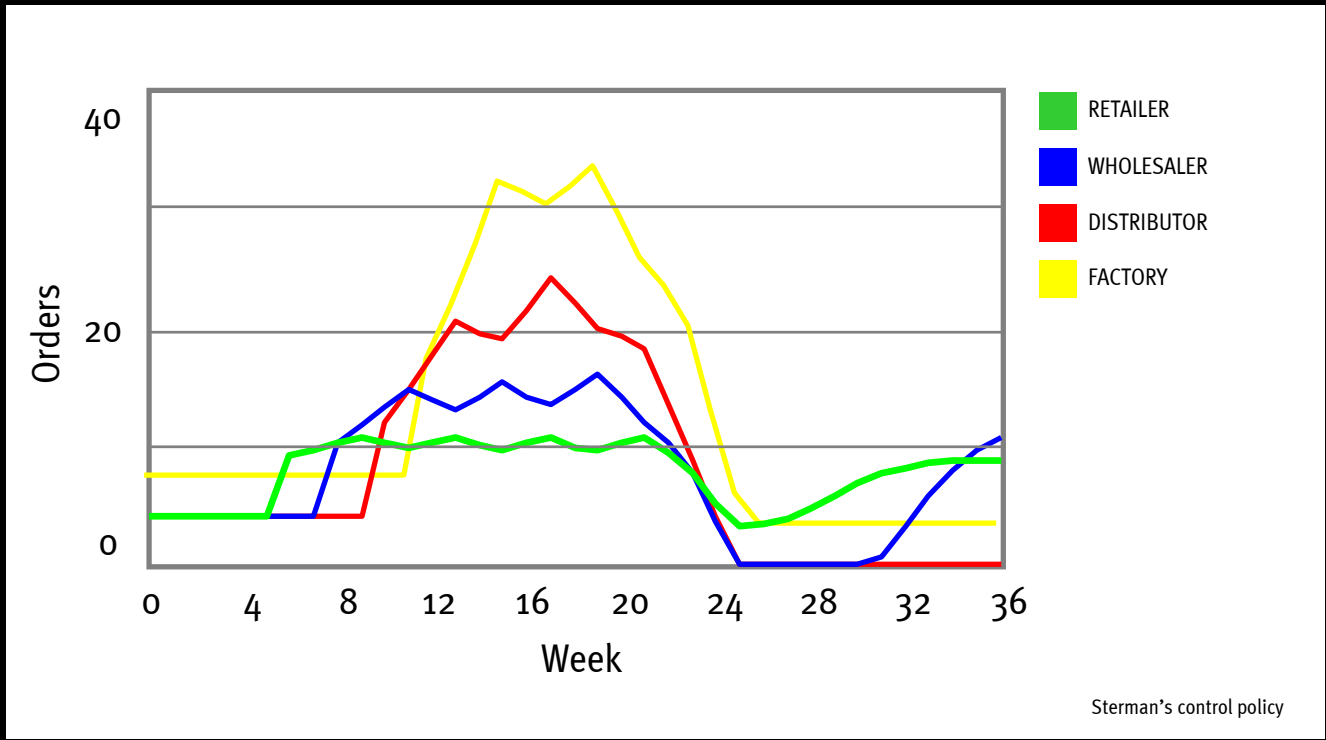
BULL-WHIP IN THE BEER GAME



Sterman's control policy