Prof. Herer’s Self Introduction

Faculty of Industrial Engineering and Management
Technion — Israel Institute of Technology
Purpose of Introduction

- Find research partners.
  - I missed many of you this morning due to teaching
  - If what you hear interests you, let’s talk
- Get to know one another
Self Introduction

- Who am I not?
- In the beginning
- Growing up
- Major contributions
- Research subjects
Who am I Not?
In the Beginning

- Born as a small baby in a town just outside State College Pennsylvania (Pittsburgh)
Growing Up

- B.S. in Operations Research and Industrial Engineering, Cornell University, 1986
Major Contributions

- Joint work with Paula S. Herer
My Mother’s Cheat Sheet

- Associate Professor
- Industrial Engineering Area Head
- Best Paper Award, *IIE Transactions*, 1996
- Best Paper Award, Thirteenth European Simulation Symposium, 2001
- First Place, Mitchner Award in Quality Sciences and Quality Management, 2002
- Best Paper Award. Logistics and Inventory. Industrial Engineering Research Conference, 2006

- This last one is actually relevant
Research Subjects

- Transshipments
- Off-line inspection
- José Ventura
Transshipments
Transshipment

Definition: A Transshipment is the movement of stock between locations at the same echelon level.
Without Transshipments

1 unit short

ARG!

9 units surplus
With Transshipments

0 = 1 – 1 unit short
8 = 9 – 1 units surplus

YEA!
Two-Retailer Diagram

Supplier

1

2
Where We Have Contributed

- Two-location single-period with fixed (joint) order cost
- Two-location with fixed transshipment costs
- Multi-location with non-identical costs
  - Ditto with limited transportation capacity
  - Ditto with limited production capacity
    * Ditto with identical costs (in progress)
- A simulation tool to investigate behavior (in progress)
- Wagner-Whiten setting
- Joint determination of
  - Number of locations
  - Location of locations
  - Inventory policies
Off-Line Inspection
Off-Line Inspection

1  2  3  4  5  6  7  8

First    Last
Two Possible Outcomes for Each Part
Possible Realizations

First

Last

Possible Realizations
The Inspection Process

1  2  3  4  5  6  7  8
First

Last
Two Possible Machine States
Possible Realizations

First

Last

Possible Realizations
Where We Have Contributed

- Finding the status of each unit
  - Serial inspection
  - Parallel inspection
- Finding the transition unit with a given confidence in the presence of inspection errors
- Economic optimization (do not spend $10 to save $1)
  - Ditto self regenerating process
  - Ditto imperfect process
  - Ditto inspection errors
José Ventura