The DynaMan
Management Flight Simulator Workshop

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The Paradox of New Tools and Technologies

- Managers are faced with an increasing array of tools, technologies and processes all with documented benefits
  - Lean production methods
  - High performance work systems
  - Virtual communication and collaboration systems
- And they spend substantial amounts trying to implement them. For example, according to Pfeffer and Sutton (2000), in 1996...
  - There were over 1,700 management related books
  - US Companies spent over $60 billion in training
  - And another $45 billion on consultants
- Yet, such implementation efforts often fail to produce significant improvements in performance.

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Motivation

• Academics say:

“Particularly striking is the ability of some firms to resist imitation despite public scrutiny of their strategies. Firms such as Dell Computer, Southwest Airlines, and Toyota enjoy higher rates of return and faster growth than rivals even though ...”

– journal articles,
– case studies,
– analyst reports,
– and books by founding executives

reveal the ingredients of their successful recipes.”

– Jan Rivkin, Management Science 2000

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DynaMan Mgmt Flight Simulator

The Company
• Manufactures widgets
• Does process improvement to get better

The Market
• Buys widgets at a fixed price
• Can absorb all the production the company can achieve
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Your Objective:
• Maximize cumulative production
• Cumulative production is the sum of the weekly production rates.

Your Decisions
• Target Output (widgets/week)
• Project Start Rate (projects/week)
• Hours to Production (hours/week)
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Production Rate depends on:
• Hours to Production (hours/week)
• Productivity of the workers’ time, a.k.a. Process Capability (widgets/hour)

The Workforce:
• Fixed size and workweek
• 1000 hours/week
  = 25 workers x 40 hours/worker/week

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Workers spend their time three ways:
• Production – making widgets
• Improvement activity – doing projects
• Doing nothing – resting when they can

Time Allocation:
• Manager sets Hours to Production
• \( (1000 - \text{Hours to Production}) = \text{Hours to Improvement} \)
• Workers will not produce more than the target output.
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Improvement Activity

• Improvement projects boost Process Capability.
• Process Capability wears off over time.

Project Starts

• Improvement time is all used to do the projects in process.
• Workers can do projects the “right” way and learn, or take shortcuts if overworked.
• Doing it the “right” way yields learning and increases productivity of improvement activity.

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Getting Started

• Open DynaManMFSV2 and enter password
• At “Dynamic Managing” screen, click “Continue”
• At “Main Menu,” click “Play a Game”
• Enter a name for the file “Run1yoursurname”
• Enter decisions, click “Forward”
• When done, click “End Game”
• Do THREE runs, named Run1…, Run2…, and Run3… and STOP.

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Process Capability
• Increases through Improvement Projects
• Decreases (fractionally at 1/12 per week)
  – Turnover, attrition
  – Deteriorating equipment
  – Changing market demands
  – Changing technology

Improvement Projects:
• Completed projects boost Process Capability.
• Improvement value = 0.1 widgets/hour/project

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Improvement Activity
• One task per project

Improvement Project Productivity:
• Option 1: Prescribed method
  Initial productivity = 0.2 tasks/hour, but will improve with learning by doing
• Option 2: Workaround
  Productivity = 1 tasks/hour

Workers choose based on workload – use prescribed method as much as possible but get the work done in time (4 weeks).

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