A new operating system for managing projects

Lean Construction Institute
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O → A → R

Change the observer

Toyota Production System (aka Lean)

- Chief Architects
  - Taichi Ohno & Shigeo Shingo
- Situation
  - Short of everything
  - Multiple products
  - Threat from US Manufacturers
- Challenge:
  - Increase performance 10X in 3 years
  - A new waste:

Source: The Machine that Changed the World by Womack, Jones & Roos
A new operating system for a new coherent common sense

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Optimize the project not the piece
Reliable workflow is a first concern

The gains are lost & the losses mount up
High Variability and Load on Resources (cars on the road) increases the travel (Cycle) time.

Research
- Go to Gemba in Design and Construction
  - Study workflow – push and pull, operational and contractual contingencies and sources at all levels
  - Identify local issues, describe current practice, work with practitioners to improve – OSHPD
  - Descriptive studies in design from TVD and Set Based perspectives, how close how far?
  - Compare practices on lean and traditional projects
  - Describe and measure function and capability of planning and control systems
- Organizations and Safety
  - Shift focus from individual motivation and training to system design and organizational dynamics
  - Use Cynefin model to understand and describe how people make sense and the fit with observed circumstance and structure.
- Industry Structure
  - How might project collaboration lead to new corporate structure
Teaching
1. Bring production management principles and practices into existing courses (lots of great simulations!)
   - Impact of variation and dependence on system performance
   - Principles of production system design for project settings
   - Practices
     • Using BIM to support production system design,
     • TVD and Set Based Design
   - Bring speakers and cases to class
2. Shift from “Productivity Improvement” to “Production System Design and Improvement”
3. Rethink Curriculum

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