

# **Why is the Broad Implementation of Lean Higher Education Failing?**

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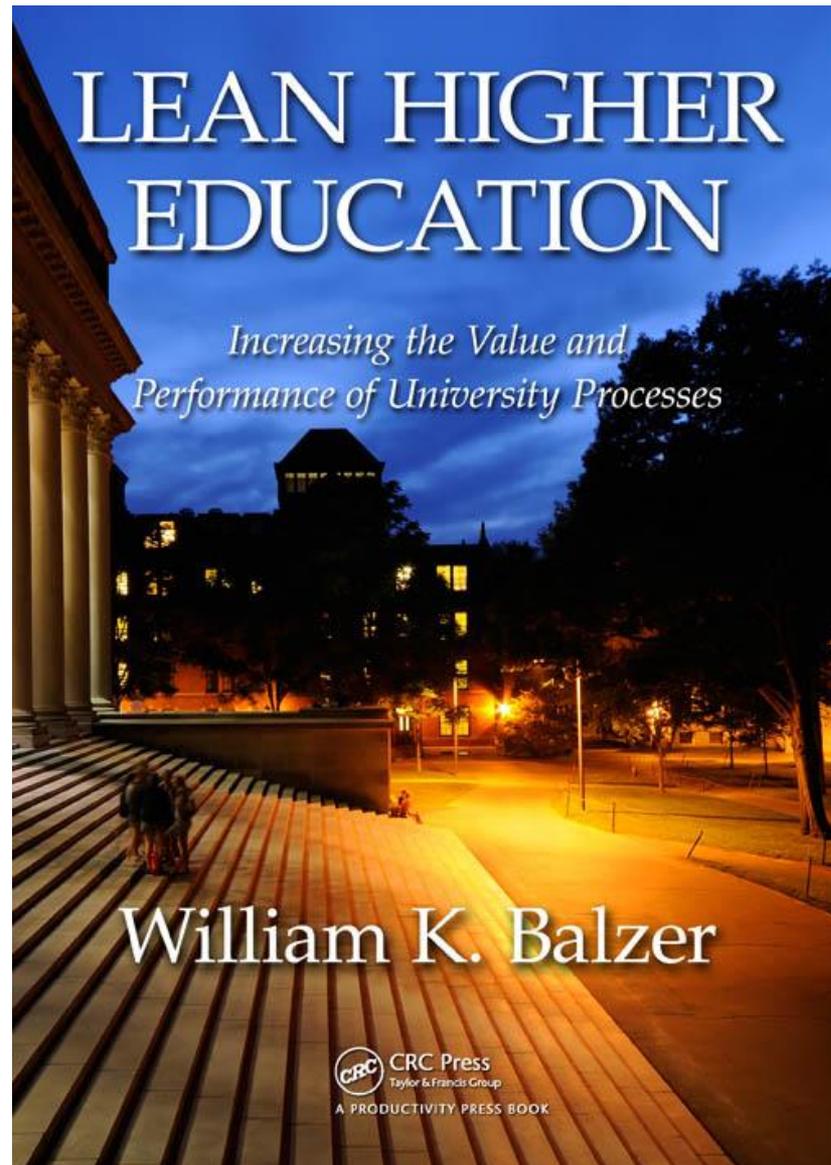
## Thanks to My Colleagues

BGSU Senior  
Administration

BGSU Process  
Improvement Teams

BGSU LSS Facilitators and  
Project Sponsors

OhioLean.org



# Today's Goals

- Express concern regarding the stagnation of application of LSS in U.S. higher education
- Be provocative
- Challenge our understanding (5 Why; Root Cause Analysis) and consider solutions that expand the application of LSS/LHE
  - *Strategically, Deeply, and Broadly*

## Many Universities, Many Lean Processes

U Central Oklahoma

U New Orleans

U Michigan

U Iowa

U Scranton

Rensselaer Polytechnic

UC Berkeley

U Washington

U Minnesota

U Wisconsin

U Virginia

U Texas – Dallas

Carleton University

Facilities work order process

Grad student payroll process

Construction process

Hiring process

Enrollment inquiry process

Curriculum design process

Printing services

Research financing process

Student readmission process

Info technology process

Events/Calendar process

Banking reconciliation process

Student exchange application  
process

# Lean in U.S. Higher Education: Common Features (Behm et al. 2010)

%	Feature of Lean Initiative
67	Administer training as needed (JIT) for those involved in projects
60	Established a small office or function with dedicated FTE
60	Applied Lean to administrative functions initially
53	Regular updates to the university on the progress of Lean efforts
53	Use Lean as the main continuous improvement strategy
<b>53</b>	<b>Have full leadership support for Lean initiative</b>

*N = 15 colleges and universities*

# But where is Senior Leadership Support?

- Reviewed 20 US Colleges & Universities
  - Bowling Green State University; U Central Oklahoma; Ohio State; U New Orleans; U Michigan; U Iowa; U Scranton; Rensselaer Polytechnic Institute; UC Berkeley; U Washington; U Minnesota; U Wisconsin – Madison; U Wisconsin – Stout; U Notre Dame; U Southern California; U Virginia; U Texas – Dallas; Carleton University; Penn State; Cornell University
- **5-10%** included Lean concept in strategic plans

# Why the Disconnect?

- LSS: 60+ years of success
  - Success in virtually every industry (manufacturing) and service (health care)
  - Widely acknowledged even if not practiced
- LHE:  $\approx$ 20 years later (in the U.S.)
  - Great success in HE
  - Limited application in HE
  - Limited awareness among HE leaders
- What are the evidence-based alternatives?

# Hypotheses: Failure to Implement LHE

- A personal perspective as LHE facilitator, consultant/ speaker and University Administrator:
  1. Failure to speak the language of HE
  2. Failure to communicate the language of LHE
  3. Failure to demonstrate the effectiveness of LHE
  4. Failure to understand the dynamics of organizational transformation and change

# 1. Failure to speak the language of HE

- Selling CDs at 3M: Speaking the language of senior leadership (i.e., side vs. front view)
- Consider metrics used by LSS practitioners
  - CTQ: Cp process capability, Cpk process performance, process control limits, first pass yield, DPMO
  - CTS: total time, process lead time, value creating time, value added time, demand rate, process time, changeover time, total distance
  - CTC: accumulated inventory, cost per unit, etc.

# Metrics for Senior HE Administrators

- Students:
  - student yield
  - # FTE student enrollment
  - % FTFT,F2F student retention
- Faculty & Staff
  - # FTE faculty and staff
  - SCH/FTE
  - % voluntary turnover
- External Support
  - % alumni & friends giving; \$ raised private giving
  - $\Delta$  grant submissions; grant cost share/overhead return

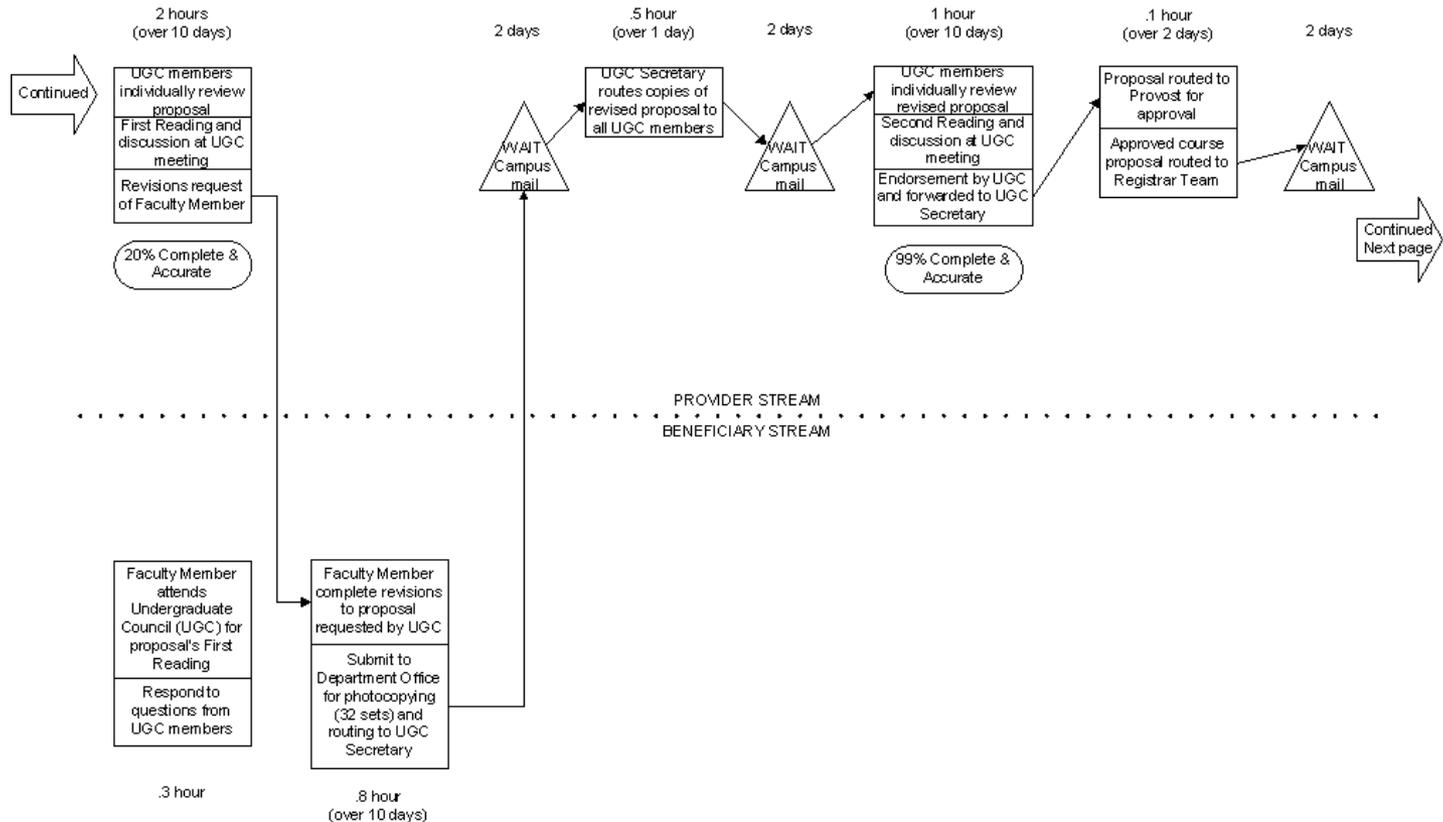
# Recommendations

- Learn and adopt language of senior HE administrators
- Focus groups: VoSeniorAdministrators
- Translate (or delete) LSS metrics in presentations, report outs, A4s, etc. to senior HE administrators

## 2. Failure to communicate the language of LHE (to Senior Administrators)

- Rich language of LSS strategy, method, tools
  - Kaizen, value stream, gemba, poka-yoke
  - SIPOC chart, 5 Why, 5S, FIFO lanes
- LSS language as an asset
  - Inference of expertise, credibility, professionalism
- LSS language as a liability
  - Limited understanding = limited acceptability

# Example 1: VSM



- If you don't understand it, why would you adopt it?

# Example 2: Higher education is NOT a business

- Faculty member reactions
  - Voice of Customer
    - “students are not customers, and education is not a product”*
  - Standardized Work
    - “the educational process cannot be standardized, and it is a violation of my academic freedom”*
  - Lean
    - “cutting the faculty and staff is mean and will not build a great university”*

# Recommendations

- Translate the language of LSS to the language of the audience to improve accessibility and acceptability
  - Rapid Improvement Workshop (vs. kaizen)
  - Visual Management System (vs. kanban)
  - Convert to the common metric of \$\$?
- Find faculty metaphors
  - Surgeons and airline pilots use evidence-based practices to improve outcomes (e.g., infection rates)
- Is it time to replace/downplay the term “Lean” given its corruption/misperception in the general public?

### 3. Failure to demonstrate the *effectiveness* of LHE

- Extensive accumulation of successful case studies **supporting** the effectiveness of LSS in higher education
- Limited/No rigorous scientific research **demonstrating** the effectiveness of LSS
  - Deficient and contaminated operational definition of LSS as an intervention
  - Absence of a testable and falsifiable theory of LSS
  - Lack of rigorous research studies despite the potential impact on people and organizations
- **Would you fly in a plane, go over a bridge, undergo surgery if it had the level of rigorous scientific evidence of LSS?**

# The Need for True or Quasi Experiments

- Random assignment to LSS intervention
  - Rule out selection x treatment bias and regression to mean
- Use of control group
  - Placebo to rule out the classic “Hawthorne Effect”
- Use of statistical tests
  - Rule out type I errors (false positive results)
- Use of replication
  - Robustness across facilitator, organization, etc.

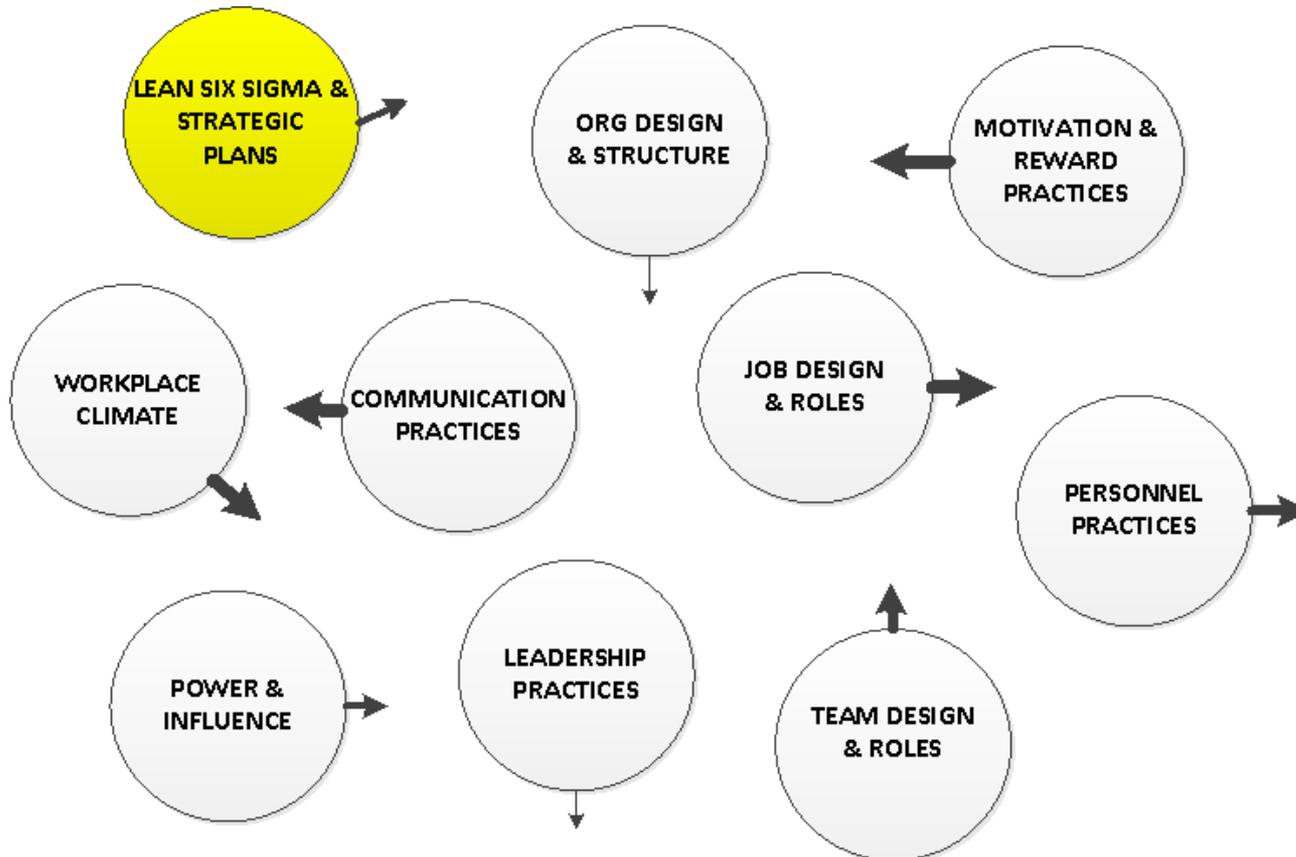
# Recommendations: Art → Science

- Application of Quasi-Experimentation
  - Campbell & Cook (1979): Nonrandom assignment, interrupted time series designs, etc. where true experiments are unlikely
- Rigorous tests of the impact of LSS
  - e.g., employee engagement, job control, self efficacy
- LSS Research Consortium
  - Collaborative research studies that share research design and analysis expertise
- Systematic Review and Evidence Synthesis
  - e.g., Rousseau (2012) “Evidence-Based Management”

## 4. Failure to understand the dynamics of organizational transformation and change

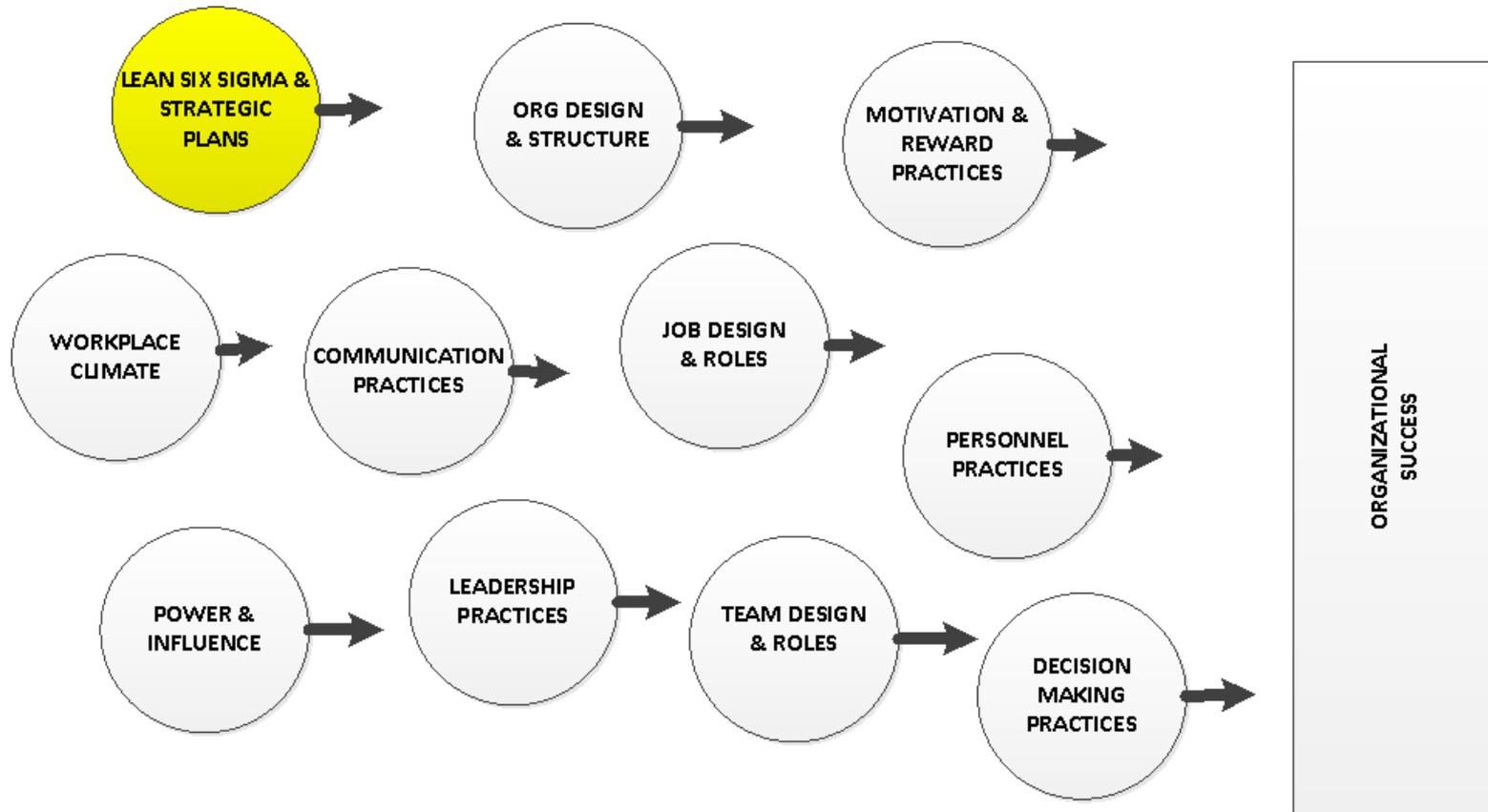
- LSS expertise & implementation: Certifications, apprenticeships, seminars, tool box, etc.
- Organizational diagnosis and change (ODC) and organizational behavior (OB) expertise: Limited
- Colleges & Universities designed NOT to change!
  - Deliberative decision making and stable culture
  - Traditions & longstanding practices

# Limited Success of LSS: Misalignment of Institutional Practices



INSTITUTIONAL SUCCESS

# Using ODC to Align Institutional Practices with LSS



# Recommendations

- Expanded training in ODC and OB for LSS practitioners
- Partnering with ODC and OB specialists
- Anticipate/Address that institutional culture is enduring and difficult to change (Balzer et al, in press)
  - University systems and structures are over-determined to produce stability
  - Individual and group inertia
  - Threats to status quo

# Other Issues

- Too few practitioners
- Limited training for higher education applications
- Limited publishing and promotion
- Out-marketed by others

# Moving Forward

- Using LSS tools to address our own challenges
  - “HE’s **VoC:**” what do senior HE leaders want?
  - “**5 Why:**” root causes for limited LSS adoption
  - “**Standardized Work:**” engaging HE leaders and commitment to LSS
  - “**Structured Problem Solving:**” examining failures to introduce, implement, and sustain LSS

# Summary

- Four hypotheses why LSS/LHE is not broadly implemented in U.S.
  1. Failure to speak the language of HE
  2. Failure to communicate the language of LHE
  3. Failure to demonstrate the effectiveness of LHE
  4. Failure to understand the dynamics of organizational transformation and change
- Provoke greater self-reflection on our efforts
- Urge the use of our own tools to improve impact

**SUCCESS OF COLLEGES & UNIVERSITIES**

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