

### INTRODUCTION

Higher education institutions are faced with many challenges including:

- pressure to lower costs
- increase student success and retention
- Increased competition for funding
- increased reporting demands

How can we apply the principles of Lean Six Sigma to higher education to improve performance, lower cost, and improve customer satisfaction?



### CONSIDER THE FRAMEWORK

Higher education suffers from customer centric and process-based problems ideally suited to Lean Six Sigma.

#### HOWEVER

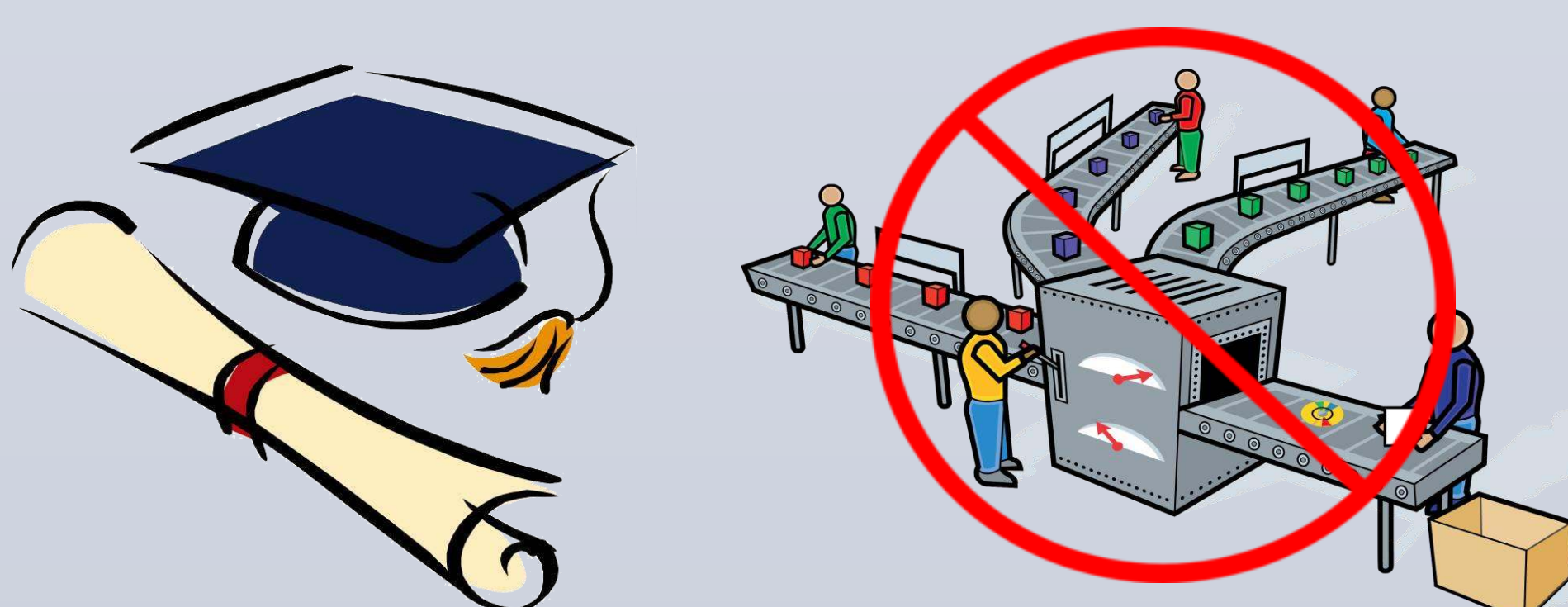
Higher education is not manufacturing. Where LSS has been introduced into higher education institutions without adjusting the models used in manufacturing, improvements were limited.

Due to demand variability (student enrollment fluctuations may not be predictable) and input variation (students are not uniform in background, age, gender, ethnicity, etc.) higher education institutions must evaluate the way Lean Six Sigma is applied and what tools are used.

Traditional LSS tools such as demand levelling and value stream mapping may be inappropriate. Higher education institutions must also consider the vocabulary used in manufacturing does not directly align with higher education.

Finally, from an LSS perspective, who are your customers?

- students
- faculty
- operational employees



### BARRIERS, RFs, CSFs, CFFs, KPIs

#### Barriers

- What is a defect?
- SILOs
- Expectation of quick-fixes
- Terminology
- Leadership
- Culture



#### Critical Failure Factors

- Lack of visionary leadership
- Lack of process ownership
- Lack of training
- Poor project selection
- Cultural changes
- Academic freedom

#### Readiness Factors

- Leadership and vision
- Management commitment and vision
- Linkage to strategic plan
- Customer Focus
- The right people

#### Critical Success Factors

- Leadership
- Project selection
- Training
- Accountability
- Technology
- Marketing
- Communication
- Culture
- Organizational Readiness

#### Key Performance Indicators

- University ranking
- Student completion rate
- Student satisfaction
- Student attendance
- Quality of research
- Facilities satisfaction
- Application processing time
- University housing



### PROJECT SELECTION

Lean Six Sigma can be applied to facilitate process improvements in curriculum delivery; business and auxiliary services; admissions and enrollment management; and research.

- establish student competency definitions for the curriculum
- improve timing of the receipt of tuition and fees
- determine and lower the variation rate in the amount of marketing funds expended per admitted student
- cultural change mechanism to support faculty research

All regional accrediting agencies in the US require some form of continuous improvement. DMAIC is preferred over Plan-Do-Check-Act method, as DMAIC provides consistent emphasis on problem-solving by integrating specific tools into each step of the phases

"Most colleges and universities would benefit from having a unifying framework and common language to guide review, planning, and improvement at all levels and across various departments and programs." - NACUBO

"evidence of quality improvement" - Middle States Commission on Higher Education

"framework for continuous improvement" - Northwest Commission on Colleges and Universities

"quality enhancement through continuous assessment and improvement" - Southern Association of Colleges and Schools

"culture of ... improvement" - Western Association of Schools and Colleges

"culture of continuous improvement" - Higher Learning Commission

### CONCLUSIONS

"Six sigma may be fine for manufacturing, but you'll soon discover our industry is unique."

When adapted to the Higher Education domain, Lean Six Sigma can be used to improve academic and administrative operations across the institution.

Strong executive leadership is required to overcome the significant cultural hurdles and resistance to change that is prevalent in higher education institutions.



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