Integrated LeanSigma: Training it and Doing it

Presenter today

D. Scott Sink, Ph.D., P.E.
Senior Advisor, TPG
Facilitator and Member, CISE
Operational Analytics Certification
Program Lead for IISE

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INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS
75th ANNIVERSARY

09 March 2023
Thank you for joining us!

We’ll share how to get access to the recording, presentation, YouTube versions and blogs at the end of the webinar.

We will field questions as appropriate and time permits. Please use the ‘chat’ function to share your comments and questions.

Follow up questions are welcomed and contact information is provided at the end of the presentation.

For those who value certificates of participation, IISE will be mailing those out the week after the webinar. Be patient and check your clutter and spam folders if you don’t receive one.

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**Exclusive Promotional Offers**
IISE members have access to exclusive promotions providing you the right Dell solution at the best price. Members can save an additional 5-10% on Dell Branded technology solutions.

**Small Business Tech Advisor**
A single point of contact at Dell who is dedicated to understanding your business needs and providing you with a custom-tailored technology solution fit for those needs.

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**Partner Outreach Program**
As a benefit of being an IISE member, you have access to our virtual IT consultations. We will have a Dedicated Account Executive diagnose and provide a solution for all your tech needs.
Agenda

11:00  tee-up

Summarizing what I’ve learned, what works for me relative to Training Integrated LeanSigma

Summarizing what I’ve learned, what’s worked for me relative to actually doing process improvement projects

11:50  ‘What’s Ahead’ and IISE Spring Conference in New Orleans

12:00  Adjourn

Note: Lot’s of slides, wanted more rather than less for you all to have, BUT I will just be hitting highlights on many of the slides so bear with me.
Knowledge and Experience Base for what I’m sharing today

2004-2007  **VP Business Process Improvement, MDS Int’l.**
- Built a BPI program, fueled with Integrated LeanSigma, from scratch.
- Trained and certified over **300 GB’s and BB’s** from 2005-2007
- Over saw over 300 projects in 2+ years with run rate of $12M
- Charged with finding $360M in missing benefits from our Oracle install and staffed team to get that done
- Created an Op Ex Program for our Diagnostics Business that supported a valuation lift of $300M
- Worked closely with BMGi and Moresteam on curriculum, content, testing, training, certifying.

2007-2020  **Director of the ILSS Certification Program for ISE at OSU**
- Deployed the course I developed at MDS (tailored format) as a three course sequence in ISE (Tech Elec) that integrated with capstone sr. design and led to dark green belt certification
- Trained over 750 ISE UG’s and G’s at ILSS BB level, certificates at end of 4 ch class
- Certified over 300 ISE UG’s and G’s at the ILSS dark GB level, certifications
- Certified 1 MBB and lectured to Moresteams MBB classes

2020-Present
- **Director of the Operational Analytics Certification program for IISE**
- Sr. Advisor to The Poirier Group leading the BPI program there
Back in early 2022….

PURPOSE:
To Overview Integrated LeanSigma in the context of Operational Excellence Programs and highlight some learnings and tips on how to ensure you are getting the most from your programs.

Part I: What is Integrated LeanSigma?
The “Program” view and the Principles, Methods, Tools view
The Relationship between Op Ex, ILSS and Operational Analytics

Tee up for Part II: some detailed examples of great ILSS projects (Case Studies)

To access those two recordings and presentations, please use this link:
Access to 2022 ILSS webinar's
100+ Timely Webinars on a full spectrum of Performance Excellence topics with an Integrated Systems Engineering Perspective and Point of View.

Available on-demand for IIESE members.

Clustered into packages of webinars to provide tailored Certificate opportunities for our Members.

1--Operational Excellence
2--Integrated LeanSigma
3--Operational Analytics
4--Change Leadership & Management

Strengthen your Resume and Linkedin Page!!

IIESE Global Performance Excellence on-demand Webinar Library
You’ll get to our on-demand library, you want the two pointed to below, I think you’ll value those in addition to today’s offering.

**Integrated Lean and Six Sigma**

Our continually growing library has a full spectrum of Integrated Lean Sigma Principles and methods – the leading method for achieving Process and Operational Excellence.

- PACCAR Operational Excellence Program Overview
- Integrated LeanSigma Part II: Best in Class Certification Project Case Study Illustrations
- Integrated LeanSigma: How to Ensure You Are Tapping Into its Full Potential
- Lean Transformations: Big Guys vs. Little Guys
- Teaching Lean: Proven Best Practices for Transactional Processes
- Engaging Employees in Operational Excellence: 2-Second Lean Case Studies
- Lean Transformation - Learnings, Lessons and Tips
Operational and Business Process Excellence

Some organizations integrate Business Process Excellence perfectly. Others need a well-designed program. We’ll show you how to jump-start a great Op Ex Program.

- Using Behavior Management Principles and Methods to Accelerate BPI Benefits Realization
- Strategic Performance Improvement Planning in Periods of Economic Disruption
- Business Process Improvement: Picking the Right Projects, Best Practice Portfolio Management in Times of Economic Challenge
- Business Process Improvement Portfolio Management: Picking the Right Projects to Drive Enterprise Value Better and Faster
- Achieving Resilient Organizational Excellence in the Face of Continuing Disruptions
- Agile Operational Excellence/Business Process Improvement
- IIESE Annual Conference 2022: The Performance Excellence Track Detailed Preview
- The New Industrial Engineering: Integrated Systems Engineering and Management Systems Engineering
- Building Performance Management Systems: Sharing Lessons Learned
- Business Process Management 4.0 – Glimpses of What’s Ahead
- Engineering Social Service Systems
- Operational Excellence: Creating Strategies and Migration Plans for Large-Scale Improvement Initiatives
- Industry Benchmarking: Small and Medium Sized Enterprises Best Practices in Operational Excellence
- How to Design, Develop and Execute “Flow Workshops”
- Principles and Tools to Ensure Optimal Process Performance
- IIESE Outstanding Capstone Senior Design Projects
- Pioneering and Engineering a New World
- Resilience Re-examined: Reengineering How We do Business and Ensure Public Safety
- Restarting the Economy: Guidance on the Backside of the Disruption
- Business Continuity Strategies and Tactics in Periods of Major Disruption
- Navigating Your Business Through the COVID Crisis
- Creating and Ensuring Superior Client Experience
- How to Create People Centered Operational Excellence Strategies
- Diversity, Equity, and Inclusion: Progress and Performance Assessment from an ISE Perspective
- Creating Cultures that Support Full Potential Performance/Operational Excellence
- IIESE Performance Excellence Event of 2020: Sneak Preview
Agenda

11:00 Scott tee-up

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TRAINING ILSS:

1. **ESTABLISHING THE CONTEXT FOR ILSS and OP EX:**
   - The Context for Training, Certification, building process improvement specialists and BPI capability is a Critical to Success Factor to manage.

2. **WHO THEN WHAT—Picking the Right People**

3. **WHAT—THE CURRICULUM**
   - Pick a solid, best in class, hybrid training curriculum foundation.

4. **HOW—PEDAGOGY (how to teach/coach/train)**
   - Flip the Classroom, leverage trainer time so that they are focused on what matters to get the candidates to ‘prime’
   - Integrate Physical Simulations, Labs to provide hands-on, experiential learning.
   - Weekly ‘workshop’ style classes and/or Training Days to ensure everyone is keeping up.
   - With Moresteam, monitor and ensure that all ‘students’ are completing all the ‘side-bar’ training, exercises, etc.
   - Utilize Teach-2-Learn method with QA to support ongoing internalization.
   - Augment Moresteam with best in class case studies (tollgates from past projects) as well as with supplementary collateral

5. **CERTIFYING**
   - Leverage the Black Belt Body of Knowledge self-assessment tool to align expectations and normalize the ‘scale’ for candidates.

6. **DEPLOYING**
   - Introduce and employ Integrated Master Planning and Agile as the way to think and do projects to include the training (as a project).
The Creative Tension that Sparked this Program* (2007)

Junior (‘composite’)

PERSONAL MASTERY
- don’t listen well
- Action junkies
- don’t stay focused, can’t juggle multiple balls well
- don’t communicate well
- judgment mode common
- Parent-child lingering, still, with Teacher-Student, which will carry over to boss to subordinate if not corrected

PROFESSIONAL MASTERY
- struggle mightily to ‘reduce to practice’
- do not exhibit ideal learning behaviors
- do not understand what it takes to succeed in the ‘real world’
- struggle mightily to ‘reduce to practice’, sloppy, undisciplined practice
- can’t manage projects successfully
- do not manage relationships proactively
- cannot produce results, lose sight of the end-game
- have heard the talk on ‘ethics’ and values

ISE Core Curriculum: Essential Foundation for Systems Improvement

Senior (‘composite’)

PERSONAL MASTERY
- can deep listen, can active listen, seek to understand
- Plan before acting, Context, Possibilities, Action
- practiced focus and persistence with something difficult for 6+ months
- communication skills (written, oral, body language) enhanced for success
- spend less time in judgment more time in evaluation and difference, consciousness about tendencies
- made the switch of making the switch to Adult to Adult

PROFESSIONAL MASTERY
- improved consciousness and practice with ‘ideal learning behaviors’
- clear understanding of ‘flat world’, competitive World requirements for success, more real world savvy
- lot’s of opportunities for perfect practice
- demonstrated program and project management skill to gain certification
- relationship management skill development initialized, understand importance
- Capable of producing results in timely fashion and understand them in context of the system or higher good
- have had to walk the talk on ethics and values

The New Offering

LeanSigma Foundations + ISE Capstone Senior Design

ISE 5810 + ISE 5811-12

* A fact based yet personal representation of before and after.
Greatness is a lot about disciplined people (thought, word, deed)—Jim Collins

Disciplined about what?—Peter Senge

ISE Full Potential Performance: Discipline Requirement

Systems & Statistical Thinking

Personal Mastery

Mental Models

Building Shared Visions

Team Learning

ILSS
The business need that sparked the BPI program and ILSS training at MDS

2003-4

Enterprise:
- Business Units underperforming
- Enterprise Shared Services didn’t exist, huge inefficiencies and redundancies
- Low to no capability to systematically improve processes
- No Strategy and Policy Deployment ‘mechanism’ across functions and business units

People:
- Great talent, disciplined, smart but low to no process orientation
- Motivated to improve things but no paths by which to engage and apply themselves

2007

Enterprise:
- Focused improvements in all four business units in flight
- Enterprise Shared Services firmly established, Oracle implemented, $400M in benefits being pursued
- Top 500 leaders “White Belt” trained, 250 G/B belts deployed across the 7 functions and 4 Business Units driving best in class levels of Direct Benefits
- Specific Unit OKR’s, challenge budgets (rev and costs) and disciplined monitoring in place.

People:
- Some of the best BB’s I’ve worked with
- Picking the right people to continue to drive the program

See next three slides
The Equation for Success (Possibilities and Drivers)

Y (sustainable, best-in-class business results) = f(X (key driver variables))

- 2-3% of Total Enterprise Revenues in Hard Benefits Annually
- > $125,000 in Hard Benefits / Project
- Right Size the process improvement and business process improvement specialist pool over time to build capacity to support the required level of improvement in our business plans and objectives.
- 40% of our employees actively engaged in improvement of what we do and how we do it at any given moment in time

X1: Leadership & Management Alignment and Commitment
X2: Pick the right ‘belts’
X3: Best-in-class training and development
X4: Pick the right projects
X5: Skillful, disciplined, sustainable execution of LeanSigma Methodology;
X6: Celebrate successes and use them as a catalyst for even more success
• X7-n……(e.g. infrastructure, communication front, etc.)
I think that this article and set of steps is relevant, applicable at the BPI program level but also down at the DMAIC or DCDOV project level.
The First Six Months was Benchmarking, Partnering, Socializing with the Senior Team, Readying to do White Belt Training to the top 250 leaders.

Engage the ‘Right’ People

Pick the Right Projects

Best in Class Training

Discipline around Methodology

Celebrate Successes to get the ‘fly wheel’ spinning

Control Documents

E- Handbook:

LeanSigma Policies & Guidance

Source External LeanSigma Expertise (BMG and MoreSteam)

Curriculum Foundation

Deployment Leaders representing each Business Unit & Function
I was recruited to lead the Operational Excellence ‘Plank’ in the MDS Enterprise Transformation in 2004 (reported to President of Enterprise Services)

<table>
<thead>
<tr>
<th>Process</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| **Business Performance Reviews** | • Weekly EMT teleconferences  
• Monthly business reviews  
• Disciplined annual plans | • Action oriented decision making  
• Tighter accountability  
• Customer responsive |
| **Talent Management** | • Biannual talent reviews  
• New executive compensation plan | • Better understanding of “A” performers; enriched career path  
• Expansion of variable compensation opportunity  
• Alignment of shareholder and management incentives |
| **Customer/Competition/Capital** | • Business unit/Corporate strategy  
• Detailed industry analysis  
• Customer value led process | • Longer range growth agenda  
• Focused R&D investments  
• Capital matched to growth |
| **Operational Excellence** | • Lean Sigma Roadmaps and Toolkit  
• Compliance Programs (EHS, Quality, etc.)  
• Lean Sigma Practitioner Development  
• Balanced Improvement Portfolios | • Standard approach across the Enterprise  
• Building global quality competitiveness, productivity improvement, process and cost efficiency, compliance and assurance  
• Simplify processes  
• Customer responsive |
Managing the Fronts over time

THE STRATEGY AND APPROACH

Program Initialization
Engage the ‘Right’ People
Pick the Right Projects
Best in Class Training
Discipline around Methodology
Celebrate Successes to get the ‘fly wheel’ spinning

Point of Departure (2004):
- Isolated Process Improvement Initiatives
- Inconsistency in method and approach
- Low penetration across the business
- Not sustainable (starts and stops)

Point of Arrival (2008-2010):
Best-in-class LeanSigma Program with Sustainable Productivity and Impact:
- 2% (of Revenue) in Annual Benefits
- Critical mass of seasoned and skilled belts
- Way of doing business
- ‘Good kind of tired’

CURRENT STATE

Planning
Learning
Measurement
‘Technology’
Communication
Motivation
Political/Positioning

FUTURE STATE
The ‘End Game’ is to Optimize the Lifetime Value of various stakeholders in the system (customers, internal and external; employees; shareholders; the business)

- There is a science and there are explicit methods that can be utilized to do this
- Formalized Performance Improvement Programs (e.g. Op Ex) can have huge impact
- Blended, broad, balanced views and capabilities on types of improvement methods is required.

**End Game for our Performance Improvement Efforts—Growing Enterprise Value**

<table>
<thead>
<tr>
<th>Average Stakeholder Relationship Duration</th>
<th>Ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Longevity</td>
<td>1.0</td>
</tr>
<tr>
<td>Ideal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Stakeholder Relationship Value Created</th>
<th>Ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Behavior</td>
<td>1x</td>
</tr>
<tr>
<td>Ideal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quantity of Stakeholder Relationships</th>
<th>Ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Geog./Segment Scope/</td>
<td>1.0</td>
</tr>
<tr>
<td>Ideal</td>
<td></td>
</tr>
</tbody>
</table>
The “Cube” is a representation of Enterprise Value. X-axis = # of cust relationships, y-axis = value of the relationships (e.g. avg profitability), z-axis = the duration, stickiness of the relationships.
Full Potential Performance Strategy is aimed at effectively and efficiently migrating towards the far back right corner of the Performance Cube.

Customer Solution Design / Delivery

Cross-Enterprise Integration
Interfaced Strategies
Stove-pipe BU's & Functions

5.0 Optimized
4.0 Managed
3.0 Defined/Specified
2.0 Practices
1.0 Adhoc

Driveto Full Potential Performance

Objective Function

Process Improvement Capability Maturity

BPI Focus

Constituents are: Employees, Customers, Shareholders, Suppliers, etc.
BPI Contributions to MDS Pursuit of Full Potential Performance

- Measurement & Evaluation to Support Improvement: Fact/Data Based Decision-Making
- System & Process Improvement (e.g. Business Process Reengineering/Improvement)
- Change Leadership & Management: Full Potential Condition of Mind
- Information & Technology Enablement to Provoke Timely & Effective Decisions and Actions

- MDS and ES P&D, Dx & ITBU, EDMS & EA
- Planning System: Strategy and Policy Implementation and Deployment; Organizational Alignment/Effectiveness
- Focused Improvement: Consistency of Methods, Standards of Excellence, Assessments, Benchmarking
- Program & Project Management Discipline (Benefits Realization)
- CBS Ben. Realization & Pervasive
- EDMS & EA Integration initiative
- Dx, Ps, Nr, ES
- Pervasive
- Constituency Value Exchange Management
Leadership Alignment & Support
Infrastructure was a Critical Early Factor

Program Initialization

Engage the ‘Right’ People

Pick the Right Projects

Best in Class Training

Discipline around Methodology

Celebrate Successes to get the ‘fly wheel’ spinning

BPI Core Team
LeanSigma Architecture and Engineering

Executive Sponsors

CEO & President
LOB 1
LOB 2
LOB 3
LOB 4

CIO
CFO
EVP
Org. Dynamics

Lean-Sigma Administrative Coordinator

Master Black Belt Support—Training, Coaching

Program & Project Management Support

Subject Matter Expertise Support

LeanSigma Deployment Leaders and Managers

SME’s (Finance, IT, HR, REF, SCM, Regulatory Rep’s)

Value Stream Owners/Managers & Process Owners (Champions)

‘Belts’

Core Teams

09.03.2023

1) Pick the right belts and 2) surround them with the support requirements they need to be successful.
TRAINING ILSS:

1. ESTABLISHING THE CONTEXT FOR ILSS and OP EX:
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2. WHO THEN WHAT—Picking the Right People

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   - With Moresteam, monitor and ensure that all ‘students’ are completing all the ‘side-bar’ training, exercises, etc.
   - Utilize Teach-2-Learn method with QA to support ongoing internalization.
   - Augment Moresteam with best in class case studies (tollgates from past projects) as well as with supplementary collateral

5. CERTIFYING
   - Leverage the Black Belt Body of Knowledge self-assessment tool to align expectations and normalize the ‘scale’ for candidates.

6. DEPLOYING
   - Introduce and employ Integrated Master Planning and Agile as the way to think and do projects to include the training (as a project).
1. Belt candidates are identified as a normal outgrowth of an organization's performance management and development process;
2. Belt candidates are ‘assessed’ using a set of 11 dimensions by 2-3 people and companies are beginning to use profile instruments also.
3. The Deployment Manager or a Unit BB will compile the results and convene a short meeting to determine the qualifications of the candidate for the program.
4. Successful candidates will then be scheduled into the next available GB or BB training class.
5. Progress and Performance reviews of candidates during the certification process are part of the ‘discipline around the methodology’ portion of the overall program.
Profile for Thinking Style

The Darker shading represents the Job Match Pattern for the role of Baseline LSSigma Profile - Green Level. The larger box indicates this individual's score.

Learning Index – An index of expected learning, reasoning and problem solving potential.

Verbal Skill – A measure of verbal skill through vocabulary.

Verbal Reasoning – Using words as a basis in reasoning and problem solving.

Numerical Ability – A measure of numeric calculation ability.

Numeric Reasoning – Using numbers as a basis in reasoning and problem solving.

Profile for Behavioral Traits

Energy Level – Tendency to display endurance and capacity for a fast pace.

Assertiveness – Tendency to take charge of people and situations. Leads more than follows.

Sociability – Tendency to be outgoing, people-oriented and participate with others.

Manageability – Tendency to follow policies, accept external controls and supervision and work within the rules.

Attitude – Tendency to have a positive attitude regarding people and outcomes.
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TEACHING: My top learnings from 15 years and over 50 ‘classes’ (roughly 25 in industry, 25 in ISE at OSU)

Having a solid ‘curriculum’ that is on-line, on-demand, self-pacing, comprehensive, engaging (well designed user interfaces) is critical to success. It frees up the trainer/MBB/coach/faculty member to focus on internalization related, on the fly tailoring for the classes and students.

Moresteam was my choice in 2005 at MDS and then at OSU in 2008 and we still use it at The Poirier Group and they have partnered with IISE recently to provide best in class GB and BB certification training curriculum support.
DMAIC Roadmap Drives Creation of Value

https://www.tribalmind.co/S3/tribalmind-live/Discoveries/GMhYUVFVg0aftdAuiZdoYw.pdf
ISE + the ‘right’ performance improvement strategy and methods will push ‘levers’ in the EVM and then drive enterprise value growth (every project should map this out)

Enterprise Value Map
Practical paths to increase shareholder value
**TEACHING:** Learning-Tip-Suggestion #2: don’t under invest in physical simluations/Labs

3. Physical and ‘computer based’ simulations are essential to ensuring that the ‘student’ (ISE UG or professional in your organization) grasps the level 2 to 3 bridge, transition.

- I developed, tailored, borrowed four core simulations that were critical to Black Belt level certification foundation laying:

  1. **ProdSim, Sticklebrick**—LEANsigma ‘lab’. We did as a 6-hour physical simulation, very engaging, people love it.
  2. **Statapult**—a highly tailored, modified traditional statapult (Air Academy as example to purchase) Used this to help internalization of process capability analysis, measurement systems analysis, Design of Experiments, and more. 6-hour physical simulation.
  3. **Change Leadership & Management**—another 6 hour session focused on sparking introspection and understanding on how people change, improve. Won’t get into the details on this but will if requested.
  4. **Moresteam’s SigmaBrew Simulation**—I used one of Moresteam’s online simulations as a capstone ‘lab’. It spread over 5 weeks, last 5 weeks of the 14 week semester. In industry we did it similarly and can be done virtually.

I found these four ‘simulations’ to be a balanced and sufficient number and mix of hands-on, experiential training components to help the professionals migrate from level 2 to 3, 4 and even 5.
Get higher Levels of Knowledge and Skill

- **Remembering**: Recalling information. Recognising, listing, describing, retrieving, naming, finding.
- **Understanding**: Explaining ideas or concepts. Interpreting, summarising, paraphrasing, classifying, explaining.
- **Applying**: Using information in another familiar situation. Implementing, carrying out, using, executing.
- **Analysing**: Breaking information into parts to explore understandings and relationships. Comparing, organising, deconstructing, interrogating, finding.
- **Evaluating**: Justifying a decision or course of action. Checking, hypothesising, critiquing, experimenting, judging.
- **Creating**: Generating new ideas, products, or ways of viewing things. Designing, constructing, planning, producing, inventing.

Higher-order thinking
IISE’s Partnership with Moresteam

• For corporate training needs, IISE and MoreSteam works together to engineer a custom blended learning model with coaching and simulation-driven as well as physical simulation workshops.

• MoreSteam training comes with EngineRoom included, so there is no additional cost for statistics software.

• Moresteam integrates simulated projects (e.g. the St. Sigma hospital lab DMAIC sim) into GB and BB, threaded through the course at the end of each phase of DMAIC. This and others have been very well received by customers. Eventually there will be 5 different simulation story lines to pick from (healthcare, financial services, IT, logistics, manufacturing).

• IISE and Moresteam provide training on and other support for a wide variety of Simulations and Labs that will bring your ILSS training to life. Contact James Swisher at IISE jswisher@iise.org for more information on to take advantage.
MoreSteam Lean Six Sigma CERTIFICATION

MoreSteam certification stands apart because it delivers what you need—a balance of knowledge and experience.

Contact
James Swisher, IISE
jswisher@iise.org

Go to
iise.org/MoreSteam
For more information
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   • Introduce and employ Integrated Master Planning and Agile as the way to think and do projects to include the training (as a project).
The training model is essentially a ‘flipped’ classroom method
A critical element in the flipped classroom and blended training is what’s called teaching2learn.

- I used this pretty extensively from start to finish in the ILSS black belt training.
- In week 1, I’d have people break into small groups (can do with breakouts if virtual) and have them talk about their Summer internships (Students) or talk about some improvement work they’ve done (practitioners).
- In a face to face, physical session, we had a training room with white boards all around the room and people would over the course of the training teach concepts or tools, etc. Trainer(s) would critique the ‘teaching’.

- In short, the more you can get people to engage in things that helps them internalize concepts, abstractions the better.
- Watch-out is QA—ensuring they teach things right—”perfect practice makes perfect, not just practice”
Your course learning resources
Lean Sigma Foundations Program Initialization

Engage the ‘Right’ People

Pick the Right Projects

Best in Class Training

Discipline around Methodology

Celebrate Successes to get the ‘fly wheel’ spinning

Traditional Training Models

*Traditional model (Train-Do) of in-class training followed by work on the DMAIC project*

Enhanced Training Model

**Cheaper, Better, Faster**

E-Learning / Self Paced learning modules with reduction to practice workshops built in while belt works on a DMAIC project

**Program flow Approach**

3 wks In-Class Training

09.03.2023
Training Days in real world were critical

What I’ve found is that the weekly in-class sessions (4 credit hour Tech Elec) are essential to ensure progress and performance is happening. That’s naturally a part of doing this in an ISE program. But in industry, real world, and in a hybrid or blended training model, with physically dispersed ‘students’, weekly get togethers, even virtually, can be difficult.

So, we invented Training Days at MDS. They were weekly days that were blocked in the ‘students’ calendar where they locked themselves in a room and just focused on Moresteam work and/or project work.

Without these, we simply were not able to keep practitioners on track. Can’t count on self-managing/pacing to happen, too much variability. Then when you get to labs, some people are prepared, aren’t at the same point in learning.

Moresteam, like most LMS’s, provides visibility for what’s being done, when, etc.
**TEACHING:** Learning-Tip-Suggestion

Ensuring that the ‘student’ is taking full advantage of the Moresteam training

One of the features (and functionalities) that students really value in the Moresteam curriculum is the ‘side-bar’ icons, deeper dives, links to supporting information, etc.

- What I found with many of the ‘students’ (UG’s as well as practitioners) is that they like to take short cuts. Monitoring this behavior and reinforcing the importance of not doing that is important.
- The final exam in Moresteam is 5 hours and 120 questions, very comprehensive and very challenging. Reminding them of this is one way to shift the habit.
Moresteam does a great job augmenting the ‘text’ curriculum

Course Navigation

Here are some of the key components for navigating your course:

- **Menu:** The menu link at the top left will help you navigate your course, providing access to the course map, account information, quiz results, additional resources, and more.

- **Right Margin Links:** Many of the lessons include right margin links to essential content such as tutorials, practice exercises, and supportive materials. Here are the icons used in the right margin:
  
  - Learning Objectives
  - Deeper Dive
  - Case Study
  - Practice
  - Formula
  - Take 2 Video
  - Dataset
  - Music Video

- **Help:** If you need help along the way, click on the question mark icon at the top right to access information and tutorials that will help you navigate the course.
PROGRAM FEATURES

- Highly applied and comprehensive curriculum:
  - Integrates management systems engineering, real world business issues and learnings, data and fact based focus, and how to apply ISE core
  - Descriptive, predictive and prescriptive analytics
  - Not just coursework – industry projects, extracurricular projects, experiential Labs and Simulation, and internships

- Exposure to a range of tools, principles, methods:
  - Minitab, Value Stream Mapping and Analytics, Swim Lane Flow Maps, Failure Mode and Effect Analysis, Design of Experiments, Kanban and buffer design and inner workings, Visible measurement systems, Applied Hypothesis Testing, Design for LeanSigma, Exploratory Data Analysis, etc, etc.
  - Personal and Professional Mastery Boot camp prior to first semester

- Blended Training
  - Web-based core curriculum, reduction to practice and experiential labs, meetings are focused on reduction to practice not traditional classroom
  - Real world case studies from our extensive base of over 250 projects in Columbus but also around the World
...This is how the program is designed...

ISE 5810

Core

ISE 5811-12 or 4900

Mastery Level - Bloom's Taxonomy

Evaluation

Synthesis

Analysis

Application

Comprehension

Knowledge

Quizzes

Interactive Exercises

Simulations (Catapult)

Simulated Processes - Open-Ended

Actual Project Work Coaching

Active Practice

Dynamic
Complex
Open-Ended

Structured
Close-Ended

Structured
Simple, Linear
Close-Ended

Passive

Learning Activities
## Standard 4 year path model

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integration and Practicum with ISE 5811-12 Case Studies</strong></td>
<td></td>
<td>Internship with Industry Collaborator/Partner</td>
<td>Continued Practicum of ILSS Case Studies</td>
<td></td>
</tr>
<tr>
<td>ISE 3200—Linear and Integ Programming</td>
<td>ISE 3210—Non-Linear Programming</td>
<td>Reduction to Practice with ILSS methods and tools (Potentially Green Belt Certification)</td>
<td>ISE 4100—Stoch Modeling &amp; Simulation</td>
<td>General Educ</td>
</tr>
<tr>
<td>ISE 3600—Workplace Ergo</td>
<td>ISE 3800—Project Management</td>
<td></td>
<td>ISE 5811—Certification Capstone</td>
<td>ISE 5812—Certification Capstone</td>
</tr>
<tr>
<td>ISE 2500—Intro to Manf Engineering</td>
<td>ISE 4120—Quality Control &amp; DOE</td>
<td></td>
<td>Tech Elec</td>
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<tr>
<td>General Educ.</td>
<td>ISE 5810—ILSS Foundation Course (BB)</td>
<td></td>
<td>General Educ</td>
<td>Tech Elec</td>
</tr>
</tbody>
</table>

**Management Systems: Integrated LeanSigma Curriculum**
What will ensure you get the best job and succeed rapidly?

Answer: Putting all the pieces together before you graduate!
Apply to take ISE 5810 and then 5811-12 for Capstone

Personal and Professional Mastery:
- Team work and leadership
- Habits of Highly Effective People
- Learning how to learn better
- Change Leadership and Management
- Full Potential Performance

Systems and Statistical Thinking:
- Operational Excellence
- End2End Value Stream Mapping and Analysis
- Improve your skills with Statistical Process Control
- Exploratory and Confirmatory Data Analytics
- How many of your core ISE courses come together to improve systems and processes

Pragmatic Modeling of Problems and Projects
- Integrated Program Management
- Modeling and Execution Approaches
- Extensive Case Examples from a wide variety of organizations

Opportunity to add an Integrated LeanSigma Certification and a best in class Internship to your BSISE

Green Belt Certification on top of your Black Belt Foundation Course Certificate (5810)
5811-12 is an unpaid internship and will significantly boost your resume

See Kristen or Dr. Sink for more….
ISE 5811-12 Integrated LeanSigma Certification Capstone & Unpaid Internship

2 Semester, Unpaid Internship with company in Columbus area with your own project—Best internship Experience you can get!

Life Sciences, Health Care & Social Services

Retail & Food Processing Services

Financial & Other Transactional and Shared Services

Production, Manufacturing, & Process Industries

See Dr. Sink for more….
### Analytics

- **Exploratory Data Analysis**

- **Confirmatory Data Analysis**

- Starts with the modeling of the problem and formulation of your fundamental ‘research questions’ and hypotheses.

---

**Get the data:**

1. Import functionality from a variety of sources (SQL, Oracle/SAP, ODBC) into excel and access.

**Sort and organize the data:**

2. Advanced Sorting, filtering, moving large data sets. Creating large access databases with proper relationships.

**Cleansing the data:**

3. Cleaning the data (removing outliers, zeros, etc) in excel and Minitab. Gauge analysis.

**Manipulating the data:**

4. Advanced excel and Access functionality (Vlookup/Lookup, sumif, countif), smart ranges.
5. Pivot tables, pivot analysis, pivot charts. Minitab sorting.

**Analyzing the data**

6. Excel financial equations (net present value, ROI).
7. Excel and Minitab regression analysis, hypothesis testing, process capability, run and xbar/r testing and creation.

**Data automation**

8. Excel macros, Visual Basic, access macros and Basic SQL statements.

**Company tools and sharepoint:**

9. Basic understanding of file servers, basic sharepoint administration, uploading, sharing files.

**Dashboard creation and export**

10. Excel and access advanced charting and graphing with automatic updates. Easy exporting functionality to .csv, .xls, .txt.
Integrated LeanSixSigma Certification Program 2016-17
College of Engineering
Integrated Systems Engineering

9 Years, 240 Projects, 22+ Sponsors and growing, $9.0 M in audited Benefits, $2 M ‘in-progress’

370 candidates through the program: 4 Black Belts & 150 Green Belts Certified (25+ in-process) & 20 Yellow Belts

>97% of the candidates in this program have jobs before graduation and those ‘Graduates’ now hold jobs with Eaton, Whirlpool, Caterpillar, Parker Hannifin, P&G, Boeing, Globe Metallurgical, Chase, Bimbo Bakeries, Limited, Walmart, Rolls Royce, L’Oreal, Mettler Toledo, Owens Illinois, MoreSteam, NAVAir, Herren Associates, Bare Escentuals, Nestle, Timken, Cooper Industries, Honda Engineering, Accenture, The Poirier Group, Cameron International, Polaris, Thermatru, Unilever, General Mills, OSU Medical Center, Worthington Industries, Deloitte Touche, Discover, JP Morgan Chase, Cap One, Grange

Full Day, Hands-on LEAN Lab: Flow, Value Stream Mapping and Analysis, Kanbans, etc.

Full day, Hands on Six Sigma Lab: Process Capability Analysis, Design of Experiments, Measurement System Analysis, etc.

9 Years, 240 Projects, 22+ Sponsors and growing, $9.0 M in audited Benefits, $2 M ‘in-progress’

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Full Day, Hands-on LEAN Lab: Flow, Value Stream Mapping and Analysis, Kanbans, etc.

Full day, Hands on Six Sigma Lab: Process Capability Analysis, Design of Experiments, Measurement System Analysis, etc.
Class 3B Planned Blended Training Schedule (LS Knowledge/Skill Acquisition)

Your Final Tollgate should occur about here

RTP Week 1
(Reduction to Practice)
- Lean Simulation
- SPC Simulation
- Process Capability Simulation
- Value Stream Mapping Simulation
- D-M-A Roadmap Project Workshops
- Graphical & Statistical Analysis (student data)
- Intro to Inferential Statistics
- Homework
- Science Fair (Project Round Robins)
- Other 4 Discipline Exercises
- Teach 2 Learn Exercise
- “Fishbowl” P&P with previous classes

RTP Week 2
(Reduction to Practice)
- DOE (MAIC) Simulation
- Future State Mapping & Solution Elements
- Flow – Little’s Law
- Case Study - Future State
- A-I/C-I-R Roadmap Project Workshops
- Reinforce & Practice- Inferential Statistics
- Homework
- Science Fair Presentations & Rating
- Project Round Robins
- Other 4 Discipline Exercises
- “Fishbowl” P&P with previous classes
- Case Studies – MDS Belts
We utilized Blended Training and Concurrent Study/Learn-Do model
Quick overview of how we go about training

1. We created our initial design for ILSS training in 2004-05 time frame, at MDS;
2. 50 cohorts and over 750 candidates later we’ve landed on a very effective and efficient way to train high performing process and performance improvement specialists;
3. Our core curriculum is Moresteam’s Black Belt course;
4. We still utilize Minitab as our analytics training support tool, when possible;
5. The foundation training is essentially a 4 credit hour, UG/G level course on Integrated LeanSigma but also contains development work with change leadership and management, as an example;
6. The Certificate either concurrently or sequentially includes an actual project that then leads to Certification.
7. 2 semesters, roughly 6 months elapsed time to complete.
At perhaps the highest level the ‘roadmap’ for ILSS is this:

1. How does the system/process work?
2. How does it perform?
3. Why is it under-performing?
4. How do we close performance gaps?
5. How do we ensure our improvements worked, are working, and Enterprise Value is improved?
Greatness is a lot about disciplined people (thought, word, deed)

Disciplined about what?

Systems & Statistical Thinking

Personal Mastery

Mental Models

Creation Skillful

Team Learning

ISE & ILSS

Other Four Disciplines (04D)
Most importantly, perhaps, we’ll work to improve your Systems Thinking Skill.
Our training approach for Change Leaders/Managers is eclectic and comprehensive.
To do this it was determined that organizations needed Process Improvement Specialists—The New Industrial and Systems Engineering
Start with End in Mind—make it a pull rather than a push!! Have to get them to nail DONE!!

Today Assessment:
- What I have and want?
- What’s working
- What am I naturally ‘great’ at?
- What I tend to be naturally passionate about?
- How I create value and what others think that is worth?
- Feedback I got in asking 10 of my closest colleagues, friends
- Tendencies that serve me?
- Tendencies that don’t serve me?
- What needs work?

Future State (3-5 years):
- what I have
- what’s working
- what I am great at
- I can bring passion to what I put in front of me
- I can create greater value and serve my vision
- Tendencies I have that serve me and the higher good
All ILSS Training and Certification is going to consist of a blended training experience.
We augment our training pretty heavily with additional resources and hence end up with “dark” green belts and black belts....
ILSS Overarching Principle: Value is Defined by the Customer

THROUGH BUSINESS PROCESS ENGINEERING
Improving Standardization and Discipline and Control with day to day work practices

... with a focus on fixing the processes as a way to improve the System
Roadmaps for Lean, SixSigma and Integrated Lean Sigma as well as DCDOV are easy to find on the IoT

**Six Sigma**

- **Define**
  - Define the problem
- **Measure**
  - Measure baseline performance
- **Analyse**
  - Analyse performance and identify root causes of problems
- **Improve**
  - Identify & implement methods to solve root cause problems
- **Control**
  - Ensure improvements become embedded

**Lean**

- **Value**
  - Specify value in the eyes of the customer
- **Map**
  - Map the value stream
- **Eliminate**
  - Eliminate waste and variation
- **Flow**
  - Make value flow at the pull of the customer
- **Iterate**
  - Continuously improve in pursuit of perfection
Need to develop agility and flexibility—right method for right situation—but DMAIC (or DCDOV) really still serves as the foundation roadmaps.
Lean Six Sigma: "A comprehensive and flexible system for achieving, sustaining and maximizing business success. Six Sigma is uniquely driven by close understanding of customer needs, disciplined use of facts, data, and statistical analysis, and diligent attention to managing, improving, and reinventing business processes."

"We cannot solve our problems with the same thinking we used when we created them." - Albert Einstein

<table>
<thead>
<tr>
<th></th>
<th>Goals</th>
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</thead>
<tbody>
<tr>
<td><strong>D</strong> Define</td>
<td>Obtain customer needs and wants.</td>
</tr>
<tr>
<td><strong>C</strong> Concept Development</td>
<td>Develop Design Feature/functional requirements based on customer needs and wants</td>
</tr>
<tr>
<td><strong>D</strong> Design Development</td>
<td>Identify engineering and process parameters based on the design features/functions requirements</td>
</tr>
<tr>
<td><strong>O</strong> Optimize Design</td>
<td>Identify optimal settings for the engineering and process parameters based on data</td>
</tr>
<tr>
<td><strong>V</strong> Verify Capability</td>
<td>Establish the designed process is capable of meeting the designed target and requirements</td>
</tr>
</tbody>
</table>

Diagram showing the DfLS Framework:

"Existing Processes"

- Define
- Measure
- Analyze
- Improve
- Control
- Design
- Verify
- DMAIC Improvement
- DMADV Redesign
- DCMOV - DFSS Design / Redesign

<table>
<thead>
<tr>
<th>D</th>
<th>C</th>
<th>D</th>
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<th>V</th>
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</thead>
<tbody>
<tr>
<td>Define</td>
<td>Concept</td>
<td>Design</td>
<td>Optimize</td>
<td>Verify</td>
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</tbody>
</table>
Check Lists for you to help you prepare for Stage and Gate Meetings (you are only limited by how intentional you are as a learner today)
Fundamental Questions answered, Analytics, Deliverables Created, etc…….

- mess
- pain
- needs
- low productivity
- waste
- mis-alignment
- ambiguity
- VoC not clear
- VoP not understood
- weak, poor, no data/facts
- confusion
- data/facts, measurement system is not rationalized, not well designed from PDSA perspective
- culture often doesn’t support “B”

- Stakeholders identified, roles and accountabilities clear, and plan to manage communication and coordination defined
- Purpose and Objectives crystallized and agreed to, DONE defined very explicitly in terms of Key Metrics of Success
- SIPOC and other high level visualizations of the system and processes created and reviewed
  - Failure Modes, Wastes, Variation, Pain points, etc. overlayed
- Current state process capability, key metrics as much as they exist summarized
- Demand on the System understood and characterized (past, present, future)
- Product Families (different workflows or value streams) identified
- Business Case, v1.0 developed (Level 1)
- IMP and strategy to get to DONE created
- Measurement Plan, v1.0 completed and data warehouse started

- alignment
- focus
- clarity
- Primary Y clear and agreed to
- High level understanding of system and processes
- Failure modes, pain points initially highlighted
- DONE defined and agreed to
- strategy to get to done (IMP) agreed to
- initial business case complete
- Stakeholders identified, relationship management plan clear
## DEFINE Fundamental Questions and Deliverables

1. **What’s the ‘it’?** Meaning what’s the problem or opportunity?
2. **Why is this important?** Voices before and after.
3. **What is DONE?**
4. **Who’s on the team to help me get this to DONE?**
5. **How do I plan to crack the code on this, get to DONE?**
6. **When will we be DONE?**
7. **Stage Gates along the way?**
8. **What’s next?** Through to Ma.

| 1. System and Process views of how it works, where the waste is, where it breaks down, etc. |
| 2. the impact to the business and customers of closing the performance gap, initial Business Case |
| 3. your Promise, objectives and outcomes |
| 4. Stakeholder Map with RRA |
| 5. IMP along with ‘technologies’ to employ |
| 6. IMS |
| 7. IMS major milestones |
| 8. detailed plan through to next Stage and Gate |
**Start w/**

- DEFINE stage and gate complete (all the deliverables and outcomes satisfied)
- Voice of Process (VoP) not clear, not complete, not understood
- Measurement System inadequate
- Voice of Customer (who is the customer?) not clear and push or provider view drives things
- no Visible Measurement Systems

**End w/**

- VoP complete
- $Y = f(x)$ completed
- measurement and analysis plan finalized through to C stage
- Current State Process Capability thoroughly defined and specified
- Ready to answer questions surrounding what is causing the gap or error in performance

**Fundamental Questions answered, Analytics, Deliverables Created, etc…….**

- Measurement Plan refined, Data and Facts (Data Elements) gathered and organized ($Y$, $X$ and other variables and factors included)
- See next slide
- Value Stream Mapping and other workflow, process maps are completed (how the workflow and processes are accomplished) are completed
- Data boxes, key metrics, KPI’s for the VS’s, processes are defined, specified
- Derivative metrics are created
- Sustainability of measurement issues addressed
- Trilogy analysis completed
- Specification Limits defined and agreed to
- Voice of Process Completed
- Through to the ANALYZE Stage Gate detailed plan created and agreed to
Agenda

11:00 Scott tee-up

Summarizing what I’ve learned, what works relative to Training Integrated LeanSigma

Summarizing what I’ve learned, what’s worked for me relative to actually doing process improvement projects

11:50 Scott ‘What’s Ahead’ and IIESE Spring Conference in New Orleans

12:00 Adjourn
TRAINING ILSS:

1. ESTABLISHING THE CONTEXT FOR ILSS and OP EX:
   • The Context for Training, Certification, building process improvement specialists and BPI capability is a Critical to Success Factor to manage.

2. WHO THEN WHAT—Picking the Right People: there is a science to this, use it....

3. WHAT—THE CURRICULUM
   • Pick a solid, best in class, hybrid training curriculum foundation.

4. HOW—PEDAGOGY (how to teach/coach/train)
   • Flip the Classroom, leverage trainer time so that they are focused on what matters to get the candidates to ‘prime’
   • Integrate Physical Simulations, Labs to provide hands-on, experiential learning.
   • Weekly ‘workshop’ style classes and/or Training Days to ensure everyone is keeping up.
   • With Moresteam, monitor and ensure that all ‘students’ are completing all the ‘side-bar’ training, exercises, etc.
   • Utilize Teach-2-Learn method with QA to support ongoing internalization.
   • Augment Moresteam with best in class case studies (tollgates from past projects) as well as with supplementary collateral

5. CERTIFYING
   • Leverage the Black Belt Body of Knowledge self-assessment tool to align expectations and normalize the ‘scale’ for candidates.

6. DEPLOYING
   • Introduce and employ Integrated Master Planning and Agile as the way to think and do projects to include the training (as a project).
Just a few comments on Certification

• There is a difference between a Certificate and Certification. Many ‘providers’ today are not honest with this distinction—be wary.

• At MDS we simply would not accept most “certifications” when we were hiring BB’s to grow out BPI team. We’d either reject or make them redo the certification training and project work.

• Most wouldn’t fly with a person calling themselves a “pilot” who only passed the VFR Private Pilot’s exam and hadn’t successfully soloed and gotten 40-50 hours of training flight time with a Certified Flight Instructor.
TRAINING and DOING ILSS:

1. ESTABLISHING THE CONTEXT FOR ILSS and OP EX:
   • The Context for Training, Certification, building process improvement specialists and BPI capability is a Critical to Success Factor to manage.

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DOING: Learning-Tip-Suggestion
Picking the Right Projects

Ensuring each unit has the right portfolio of process improvement projects is a ‘Super’ Critical to Success Requirement.

- Strategy is to balance ‘pull’ from the units, the employee perspective with the Value Stream Analytics, value flow perspective.
- balance addressing expressed ‘pain points’ with data/fact based knowledge of where bottlenecks are, where waste lives, where the control points are, which KPI’s are most critical to the measures that matter, etc.

- Align the projects in units in support of enterprise OKR’s as much as possible but be aware that there are drivers and enablers and some enabler work is required.
Operational Excellence ‘07 Planning and Budgeting

MDS Operational Excellence (LeanSigma) 2007 Objectives

<table>
<thead>
<tr>
<th>Direct Benefits</th>
<th>Unit Capability Development Objectives</th>
<th>Employee Pull, Pain Points</th>
<th>Other Benefits (EHS, QWL)</th>
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</thead>
<tbody>
<tr>
<td>$15M</td>
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<td>Pharma ~$6M</td>
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MDS Franchise Value Growth:
Customer Excellence, People Excellence, Business Excellence
<table>
<thead>
<tr>
<th>1: Overall Deployment Progress &amp; Performance?</th>
<th>Diag.</th>
<th>Sciex</th>
<th>Pharma</th>
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<th>IT</th>
<th>Finance</th>
<th>HR</th>
<th>SCM/ REF</th>
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<tr>
<td>2: Picking the right belts</td>
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<td>3: Picking the right projects</td>
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<td>4: Training</td>
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<td>5: Coaching</td>
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<td>6: Belt Productivity</td>
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<td>7: Success, impact to date</td>
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<td>8: Program ROI (benefit to burden)</td>
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ISE + the ‘right’ performance improvement strategy and methods will push ‘levers’ in the EVM and then drive enterprise value growth (every project should map this out)
A program/Project Management app is valuable. We chose Instantis Enterprise Track at MDS, I used Moresteam’s TRACtion at OSU.

There are many off the shelf options today…

We utilize the IMP (Integrated Master Plan) and OKR (see Doerr) and agile/sprint retrospective methods for accountability and pace management.
Best in class Program and Project Management—Agile, fixation on rapid benefits realization

- Program Initialization
- Engage the ‘Right’ People
- Pick the Right Projects
- Best in Class Training
- Discipline around Methodology
- Celebrate Successes to get the ‘fly wheel’ spinning

Develop Habits of Achieving “DONE”

Path between improvement projects and strategic objectives:

- **Capabilities**
  - A set of project deliverables enabling an organization to deliver a desired outcome
  - They can be a service, function or operation that enables the organization to exploit opportunities. Capabilities exist prior to transition
  - Examples: R2A2 clearer due to improved Process Transparency, PML 3-4 is better understood and practiced.

- **Benefits**
  - Measurable improvements providing a business advantage
  - Benefits can be both tangible or intangible, are often interconnected and stakeholder specific
  - Examples: communication and coordination is improved, R2A2 clarity is better, we are a better process oriented organization, Higher PML’s
  - Examples: Process steps have lower CT/CT’s, improved quality, less waste,

- **Strategic Objectives**
  - Key
  - Customer Experience /Sat
  - Employee Experience

- **Outcomes**
  - Key business processes and L3 processes are executed more consistently, less variation, improved quality, less time....

- **Organizational Adoption & Alignment to Solution(s)**
How to Celebrate, Time out for Acknowledgement, Retrospectives, Offset Entropy

• Import the right kind and amount of ‘energy’ at the right moments…

• We do periodic huddles, have integrated the tiered huddle process into our engagements

• We extensively use visibility boards, Miro, as example for PDSA

• We held ‘rodeo’s’ (showcases, annual or semi-annual company conferences) that showcased key improvement projects and reinforced the Vision, Strategy and highlighted progress and performance.

• Annual updating and enhancing the Vision, Strategy, OKR’s, etc.
Good to Great lessons are useful

- This framework is an integral component of our Transformation approach and strategy.

- Note ‘technology accelerators’ as highlighting the importance of Technology Enablement and integration along with People, Strategy and Process.
They have to translate this to their project and it looks like next slide, as example
Business Case – Why this project?

MTMS Shareholder Value

Revenue Growth
- Retain and Grow Current Customers
  - Improve responsiveness to customer requests and inquiries
  - Improve tracking of customer interactions
- Improve Customer Interaction Efficiency
  - Improve emphasis on design for packing/shipping efficiency
  - Improve pick, pack, and ship processes
  - Provide staff with better customer and order information
  - Improve forecasting, planning, prioritization skills and tools

Operating Margin
- Improve Customer Interaction Efficiency
  - Order Fulfillment and Billing
  - Improve emphasis on design for packing/shipping efficiency
- Improve Development and Production Efficiency
  - Production
  - Improve Production Scheduling & Staging Process
  - Improve Capacity Planning Processes, skills, and tools

Asset Efficiency
- Improve PPE Efficiency
  - Reconfigure facilities/increase utilization of facilities

Expectations
- Improve Execution Abilities
  - Increase utilization of IT systems
  - Improve Value Delivered to Customers

Improving pick, pack and ship processes directly relates to the operating margin of the business

Business Case is comprised of two parts:
1. Non Value Added Time savings of $75/hour
2. Error Proofing Savings
### Forecasting Pharma Services LeanSigma Benefits

<table>
<thead>
<tr>
<th>Value Stream</th>
<th>Current 2007 Project Run Rate (25 projects)</th>
<th>1% of Revenue ($6M)</th>
<th>Variance</th>
<th>1.5% of Rev ($9M)</th>
<th>2% of Revenue ($12M)</th>
<th># 2006 additional belts</th>
<th># add’l 2007 belts</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSA</td>
<td></td>
<td>$660</td>
<td>$660</td>
<td>$990</td>
<td>$1,320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharma</td>
<td></td>
<td>$660</td>
<td>$660</td>
<td>$990</td>
<td>$1,320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECR</td>
<td>$492</td>
<td>$1,380</td>
<td>$888</td>
<td>$2,070</td>
<td>$2,760</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAS</td>
<td>$233</td>
<td>$960</td>
<td>$727</td>
<td>$1,440</td>
<td>$1,920</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCL</td>
<td>$525</td>
<td>$960</td>
<td>$435</td>
<td>$1,440</td>
<td>$1,920</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCD</td>
<td>$190</td>
<td>$1,380</td>
<td>$1,190</td>
<td>$2,070</td>
<td>$2,760</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,440</strong></td>
<td><strong>$6,000</strong></td>
<td><strong>$4,560</strong></td>
<td><strong>$9,000</strong></td>
<td><strong>$12,000</strong></td>
<td>23</td>
<td>40</td>
</tr>
</tbody>
</table>
The 86 belts in 2006 are driving 100+ projects with Benefits-in-process in excess of $6M

Our initial 2007 Plan calls for more than doubling the number of projects and benefits
# Directional 5 year plan

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hard/Total</strong></td>
<td>$6M/</td>
<td>$10M/</td>
<td>$20M/</td>
<td>$30M/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td>$10M/</td>
<td>$16M</td>
<td>$30M</td>
<td>$45M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gross</strong></td>
<td>$1B</td>
<td>$1B</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Benefit/</strong></td>
<td>.6%</td>
<td>1.6%</td>
<td>2%</td>
<td>2.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>~$3M</td>
<td>~$6M</td>
<td>~$7M</td>
<td>~$7M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Benefit/</strong></td>
<td>&lt;1:1 (2:1)</td>
<td>2:1 (3:1)</td>
<td>3:1</td>
<td>6:1</td>
<td>6:1</td>
<td>6:1</td>
<td>6:1</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Belts:</strong></td>
<td>3 (1:4)</td>
<td>4 (1:8)</td>
<td>5 (1:7)</td>
<td>6 (1:10)</td>
<td>1:10</td>
<td>1:10</td>
<td>1:10</td>
</tr>
<tr>
<td><strong>M/SBB</strong></td>
<td>BB</td>
<td>BB</td>
<td>BB</td>
<td>BB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FT Belts</strong></td>
<td>12 (.2%)</td>
<td>24 (.4%)</td>
<td>40 (1%)</td>
<td>60 (1%)</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>PT Belts</strong></td>
<td>51 (.9%)</td>
<td>130 (2.5%)</td>
<td>220 (4%)</td>
<td>300 (6%)</td>
<td>350 (7%)</td>
<td>500 (10%)</td>
<td>10%</td>
</tr>
</tbody>
</table>
TRAINING and DOING ILSS:

1. **ESTABLISHING THE CONTEXT FOR ILSS and OP EX:**
   The instrumentality of Business Process Improvement has to be established and bought into by the top ‘100’

2. **WHO THEN WHAT**
   Picking the right people to be part of the BPI team is a critical to success factor. It’s a big investment that can yield significant results for the organization. You win with (the right) people.

3. **WHAT—THE CURRICULUM**
   Don’t settle for less. Weak curriculum undermines your success. There’s a lot of that out there. Do your homework, don’t under invest.

4. **HOW—PEDAGOGY (how to teach/coach/train)**
   It’s all about what results they can create not about the ‘certification’. MBB that can’t produce results isn’t worth much to an organization. Teach and Coach with a bias for results, stay focused on the ‘end game’.

5. **CERTIFYING**
   It can be the booby prize basically. It’s not the piece of paper it’s the knowledge, behaviours, skills and ultimately the results you can create with teams of people. Make the Certification really mean something.

6. **DEPLOYING**
   Training them to be creation skillful and disciplined with IMP’s and the Control stage is the key. They’ll figure out how to get increasingly skillful with the roadmap(s) and tools. Being great change masters is the art that you trust will come along with gaining proficiency with the ‘mechanisms’.
Just Ahead.....

2023 IISE Training and Development Opportunities:

28 March—Best Practice Case Studies: Global Enterprise Excellence—Flex  Eduardo Toledo, VP Quality and Op Ex
https://us06web.zoom.us/webinar/register/WN_0q56PHk8TpWBsWVDSKopYQ

11 April—Principles, Strategies, Methods for Systematically Reducing Waste (LEAN) and Costs from your Organization—TPG  Jared Frederici, Sr. Lead The Poirier Group
https://us06web.zoom.us/webinar/register/WN_Yw2KaV4iSUqTgCreIcxanw

Q2 ‘in the works’ offerings for you:

• Strategizing/Rationalizing Cost Reduction in 2023
• Best Practice Case Study—Data and Analytics at University Health Network, Toronto
• Sneak Preview of the IISE Annual Conference and CISE’s Performance Excellence Track
• Creating Meaningful, Insightful Organizational/Operational Scorecards and Dashboards
• Revisiting Plan, Do, Study, Adjust for 2023
Don’t Miss our Upcoming Webinars:

UPCOMING WEBINAR:

Best Practice Case Studies:
Flex’s 20+ Year Journey to Organizational and Operational Excellence

Register for Flex Best Practices in Org Excellence

Tuesday, 28 March 11:30-12:30 pm Eastern

Eduardo Toledo
VP, Quality and Organizational Excellence
Flex
https://www.linkedin.com/in/eduardo-toledo-040a226/
Don’t Miss our Upcoming Webinars:

UPCOMING WEBINAR:

How to Systematically Reduce Waste and Costs in your Organization

Register for Systematically Reducing Waste and Cost

Tuesday, 11 April 11:00-12:00 pm Eastern

Jared Frederici
https://www.linkedin.com/in/jaredfrederici/

Jared is a Master Black Belt and a Senior Leader at the Poirier Group
IIESE Performance Excellence Track for Practitioners and Students

Operational Excellence, Performance Excellence, Integrated LeanSigma, Operational Analytics, BPM/I 4.0, High Performing Cultures, Integration of Strategy-People-Process-Information and Technology Enablement, Best in Class Case Studies Networking

All being Developed for you for New Orleans in May 2023!!!
Complete a Short Survey for us?

- Your Feedback is Important:

A short survey will be available to you as just prior to leaving the webinar, we'd appreciate your input.

Reach out if you have questions or other needs:

James Swisher  jswisher@iise.org

Scott Sink   ssink@jumpcurves.com
Our three part series of webinars on Organizational and Operational Excellence in the Fall Quarter culminated in this article in the ISE Magazine (Dec 2022)

To access a copy of this article, please use this link:


Look for our Feature article in the ISE Magazine in April capstoning our 3 part series of Webinars on Supply Chain Management Innovation for 2023!!
Visit The Poirier Group’s Website to access short versions of our Supply Chain 2023 Trilogy

https://www.thepoiriergroup.com/perspectives/

TPG YouTube Channel
Performance Excellence Track

6 Special Sessions specifically designed for Practicing ISE Professionals, Young Professionals, Students head to Industry

Scott Sink
Track Organizer/Coordinator
Facilitator for the CISE Group

Session Chairs:

- Victoria Jordan, Emory
- David Poirier, TPG
- Kerri Alderman, UPS
- Other CISE Member Companies Involved: Boeing, Duke Healthcare, Meta, Consumers Energy, GM, Disney, Deere, and more.....

https://www.iise.org/Annual/
4 ‘hot topic’ Interactive Sessions led by Thought Leaders

1. Victoria Jordan—Emory Healthcare, Thomas Davis—Duke Healthcare and others.: Healthcare and Lifesciences how ISE is and will continue to contribute;
2. Kerri Alderman—UPS & Eleke Ukpabi—Ruan, Jim Tompkins, Yves Belanger: Novel strategies and tactics to address Supply Chain Challenges
3. David Poirier—The Poirier Group, Eduardo Toledo—Flex; Debbie Nightingale: Organizational and Operational Excellence of the Future
4. Scott Sink, Jared Frederici, Operational Analytics and ISE: How to create insights and provoke timely decisions and actions in the face of all the data

Great VALUE for you and your company—we’ve assembled a team of thought leaders you won’t find anywhere else...

5. The ISE Outstanding Capstone Senior Design Showcase and Finalists Presentations: See and Hear about the top 3-4 Finalists in our annual ISE Capstone Senior Design Competition. (Sunday-Monday)

6. The Outstanding Service Systems Engineering Competition Finalist Presentations (Vittal Prabhu, PSU)—See and Hear about the top 4 Finalists from our Annual Service Systems Engineering Competition. (Sunday)

7. The Operational Excellence Division: a multitude of sessions on various topics related to Organizational and Operation Excellence that will drill down, zoom in on topics and issues covered in our 3rd Module provided by CISE.

New Orleans, IIESE Annual Conference, CISE’s Performance Excellence Track—See you there!!

Don’t forget our fantastic Keynote Presentations Sunday, Monday and Tuesday mornings.

AND....

The Opportunity to Network, build your ISE connections:

• ISE Practitioner Leadership Mixer—(special by invitation mixer for Industry Practitioners, Young Professionals, and Students, Sunday 5-6:45)

https://www.iise.org/Annual/

And there’s more reasons to attend.....

8. The Performance Excellence Track was most innovated and one of most popular track of sessions last year—it will be even better this year

9. My first IIESE conference in 1973 was in New Orleans, I got hooked and most of my most valued personal and professional relationships have come from IIESE conferences;

10. Get Altitude on things, take time to ‘recharge’, reflect, reinvent....

11. Have a Hurricane!!
Thank You!

Contact us for More Info:

For more information on how IISE can play a role with your Professional Development needs:

James Swisher: jswisher@iise.org

For questions about our IISE Webinar Series and our IISE Operational Analytics Certification Program or about CISE:

Scott Sink: ssink@jumpcurves.com

Special Thanks to our Sponsors for this Webinar:

https://www.thepoiriergroup.com/

For more information on how the Poirier Group can play a role with your Operational Excellence and organizational transformations please contact:

Jared Frederici: jared.frederici@thepoiriergroup.com

https://www.linkedin.com/in/jaredfrederici/