Integrated LeanSigma: Training it and Doing it

Presenter today

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Senior Advisor, TPG

Facilitator and Member, CISE
Operational Analytics Certification
Program Lead for IISE

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09 March 2023

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Solving complex & critical problems of the world.

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2. We'll share how to get access to the recording, presentation, YouTube versions and blogs at the end of the webinar.
3. We will field questions as appropriate and time permits. Please **use the 'chat' function** to share your comments and questions.
4. Follow up questions are welcomed and contact information is provided at the end of the presentation.
5. 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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SCAN ME

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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

IISE Global Performance Excellence on-demand Webinar Library

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 IISE members.

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

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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.

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IISE PERFORMANCE EXCELLENCE WEBINARS

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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

[Click this link to get to IISE's on-demand Webinar Library]

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
- IISE 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
- IISE 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
- IISE Performance Excellence Event of 2020: Sneak Preview

Agenda

11:00 Scott tee-up

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

11:50 Scott 'What's Ahead' and IISE Spring Conference in New Orleans

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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
- victim behavior
- 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

The New Offering

LeanSigma Foundations + ISE Capstone Senior Design

ISE 5810

ISE 5811-12

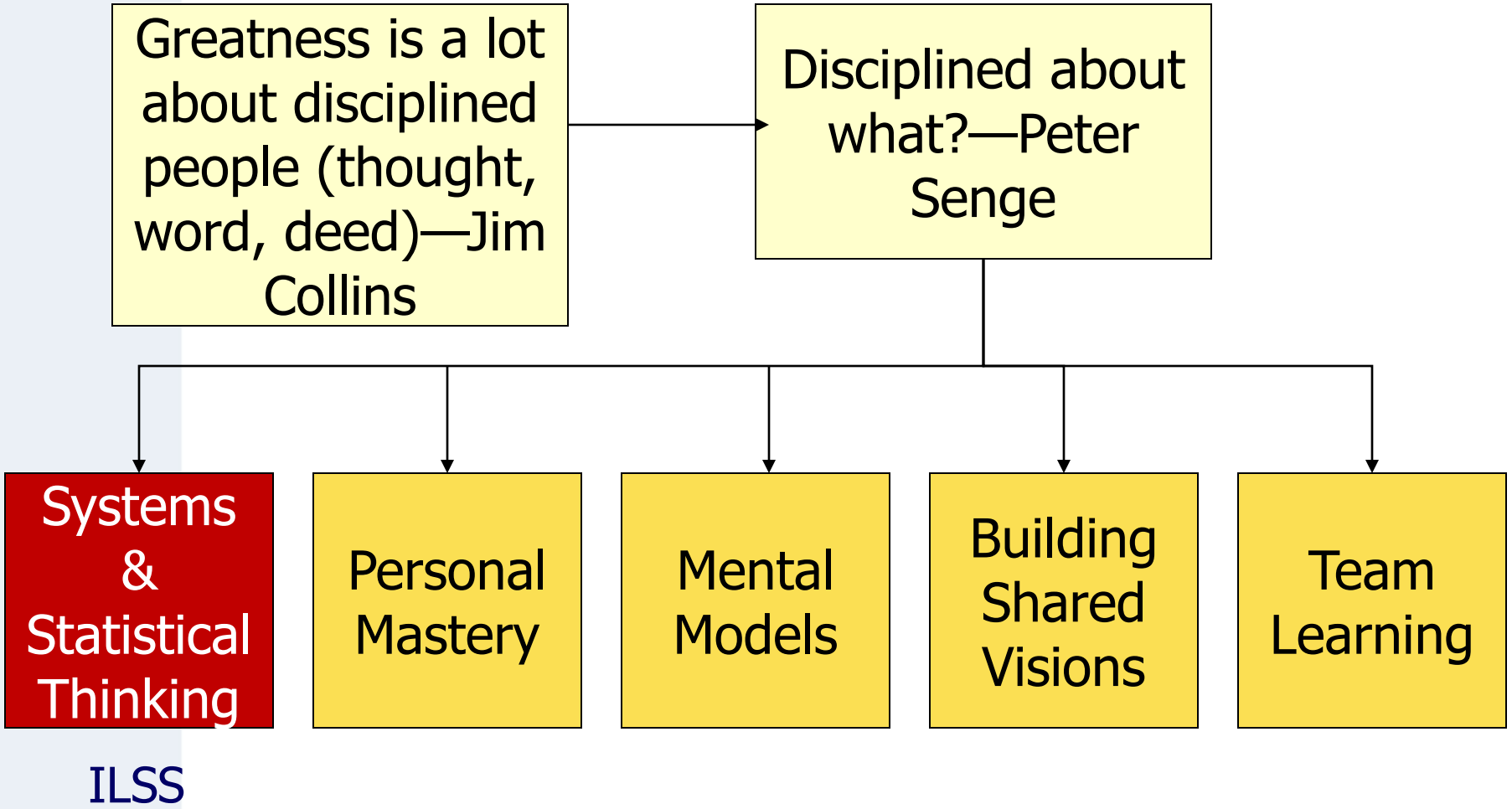
Senior ('composite')

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

* A fact based yet personal representation of before and after.

ISE Full Potential Performance: Discipline Requirement



ILSS

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

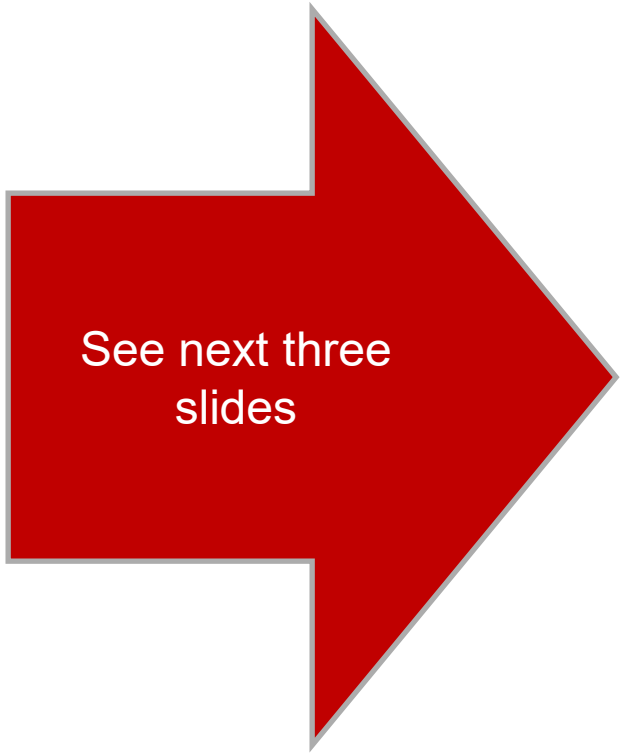
2003-4

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

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 activtely 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

Program Initialization & Infrastructure → **Engage the 'Right' People** → **Pick the Right Projects** → **Best in Class Training** → **Discipline around Methodology** → **Celebrate Successes to get the 'fly wheel' spinning**

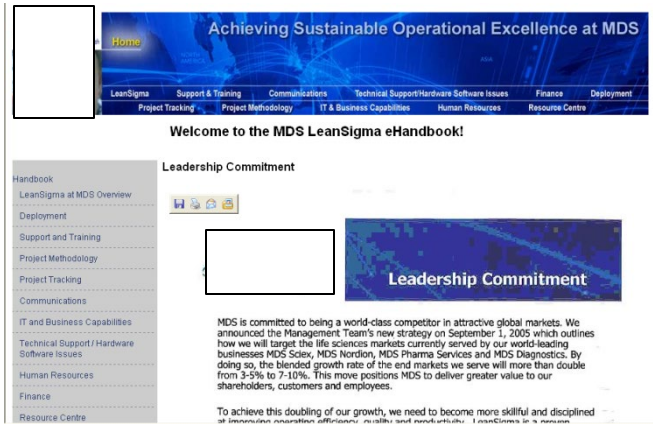
Design & Development Team (DDT)

Deployment Leaders representing each Business Unit & Function

Lean Pilots
Learnings & Results

documentum | eRoom

Control Documents

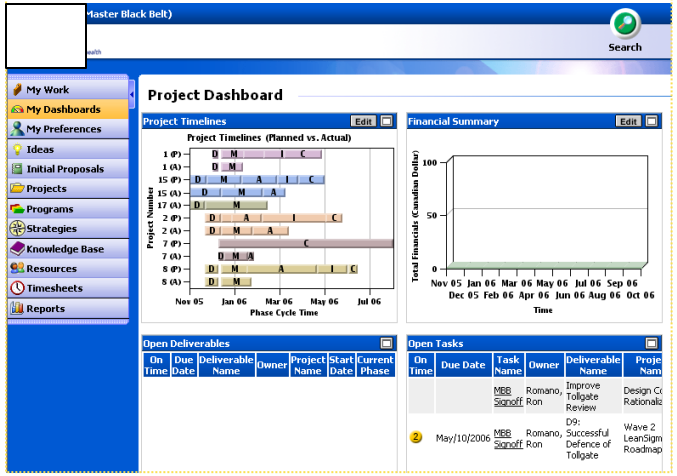


E- Handbook:

LeanSigma Policies & Guidance

EnterpriseTrack:

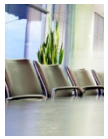
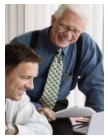
Program and Project Tracking



Source External LeanSigma Expertise (BMG and MoreSteam)

Curriculum Foundation

I was recruited to lead the Operational Excellence 'Plank' in the MDS Enterprise Transformation in 2004 (reported to President of Enterprise Services)

	Process	Outcomes
 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.)** • **LeanSigma 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

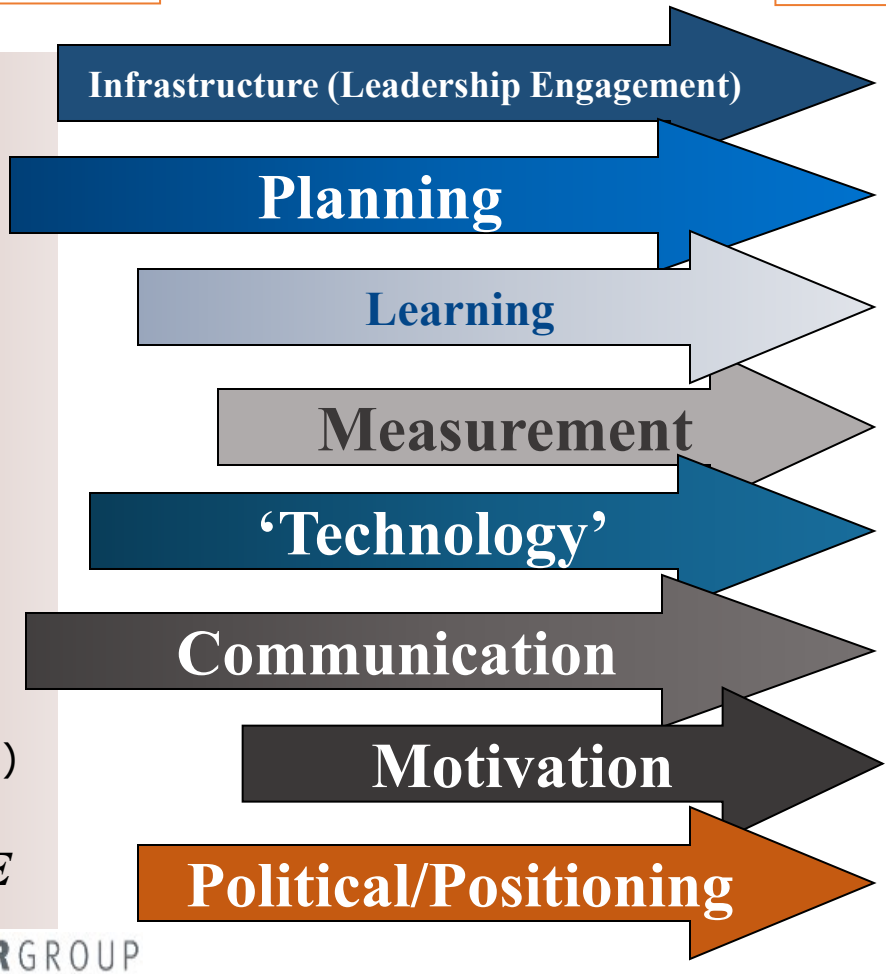
THE STRATEGY AND APPROACH

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)

CURRENT STATE



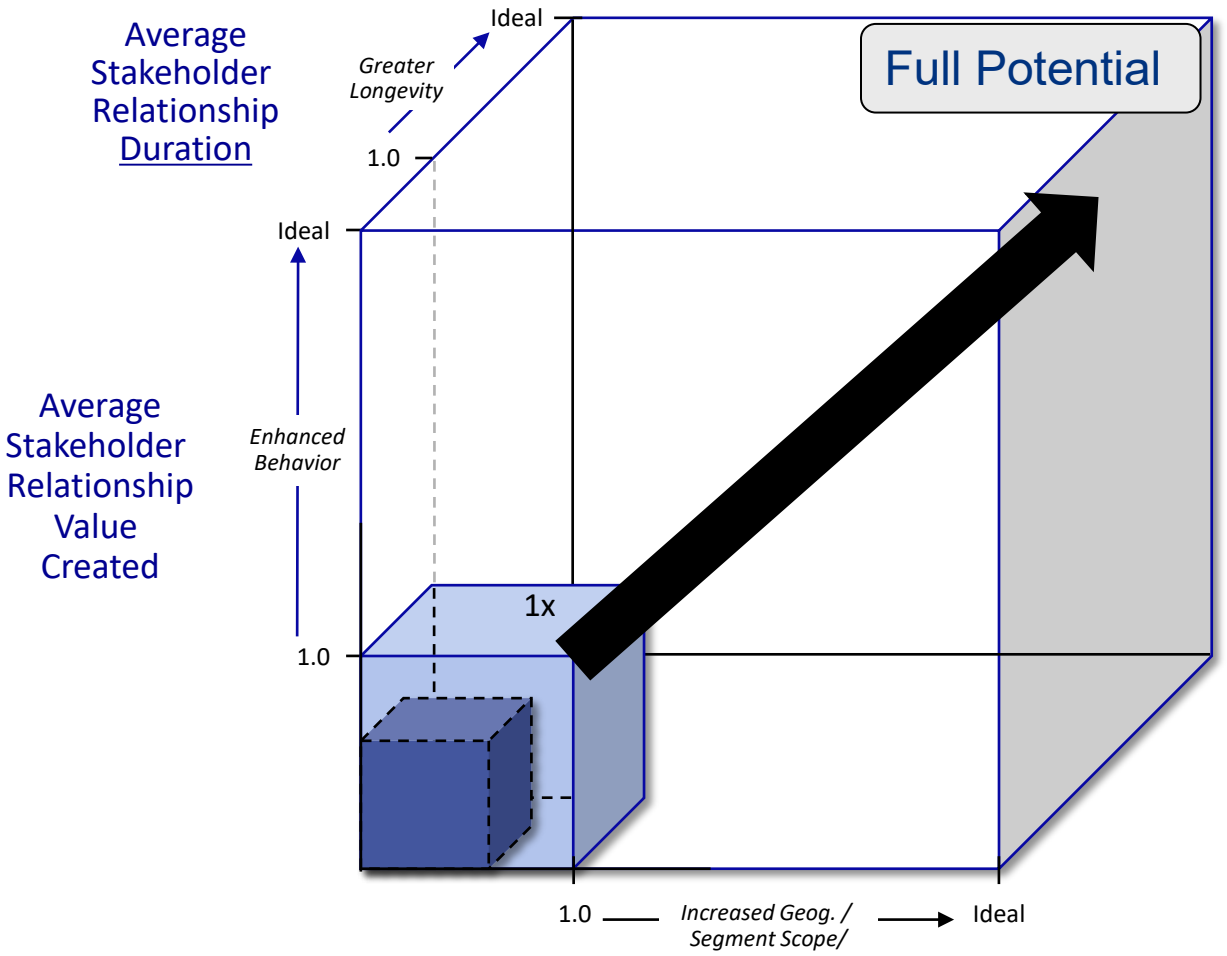
Point of Arrival (2008-2010):

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'*

FUTURE STATE

End Game for our Performance Improvement Efforts—Growing Enterprise Value

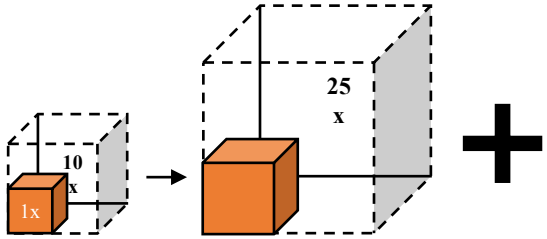


- The 'End Game' is to Optimize the Lifetime Value of various stakeholders in the system (customers, internal and external; employees; shareholders; the business)
- There is a science and there are explicit methods that can be utilized to do this
- Formalized Performance Improvement Programs (e.g. Op Ex) can have huge impact
- Blended, broad, balanced views and capabilities on types of improvement methods is required.

MDS Science advancing health

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

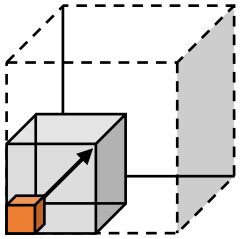
POSITIONING STRATEGY



Improve Positioning via..

Geographic Coverage / Offerings Provided / Served Segments / Branding/ Imaging, etc.

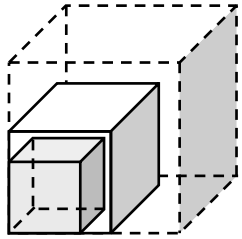
VALUE EXCHANGE OPTIMIZATION



Managing the Exchange of Value With Stakeholders

Altering the Give/Get, Responding to unmet and unfulfilled needs, QFD, Innovation, Rebalancing Segment Investment

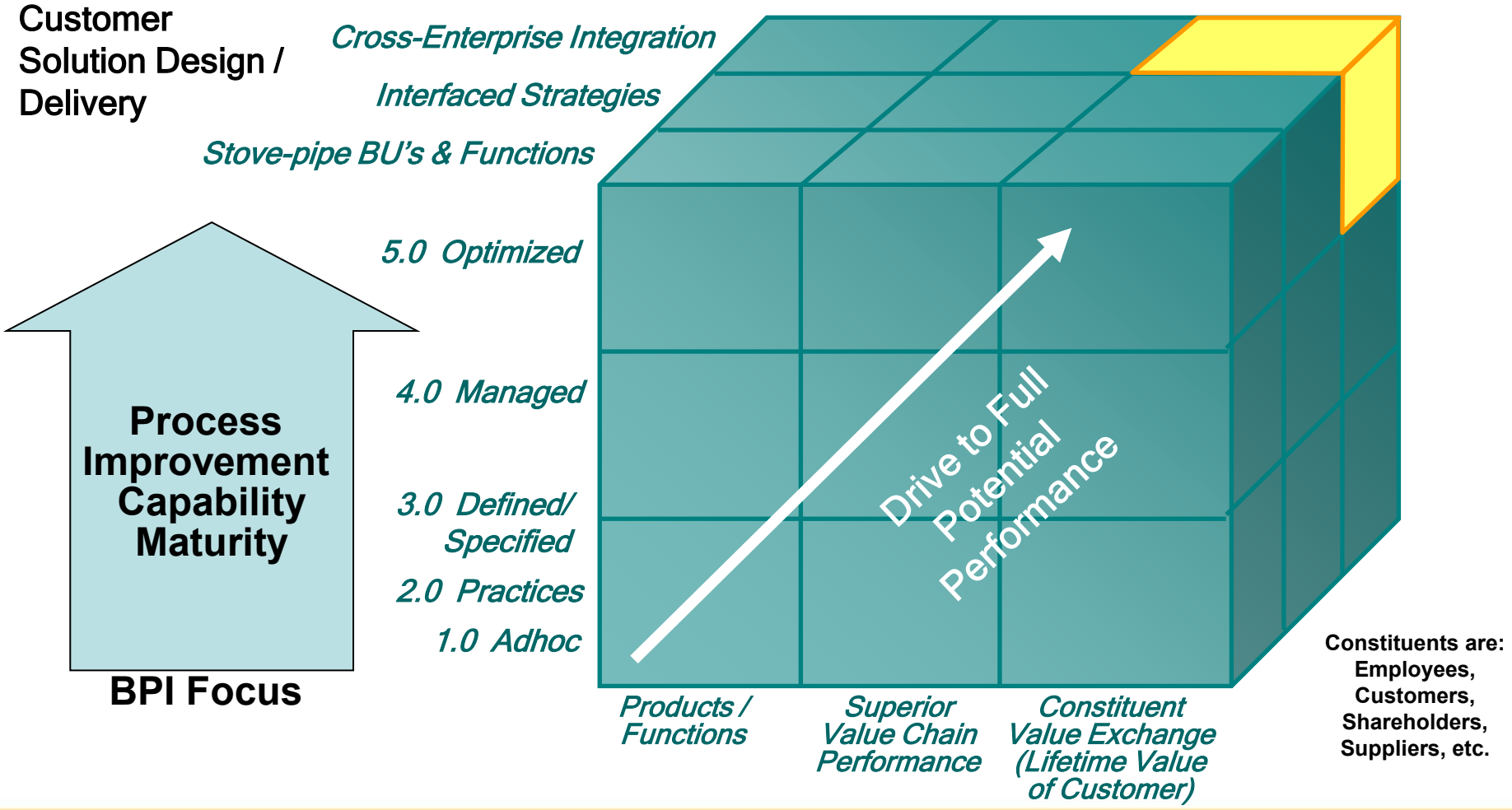
OPERATIONAL EXCELLENCE



Improve Quality, Efficiency, Productivity, Innovation, Engagement, Quality of Work life, Sustainability

Apply principles and methods of ISE and ILSS

Full Potential Performance Strategy is aimed at effectively and efficiently migrating towards the far back right corner of the Performance Cube



BPI Contributions to MDS Pursuit of Full Potential Performance

MDS Science advancing health

MDS and ES P&D, Dx & ITBU, EDMS & EA

Measurement & Evaluation to Support Improvement: Fact/Data Based Decision-Making

Dx, Ps, Nr, ES

Planning System: Strategy and Policy Implementation and Deployment; Organizational Alignment/ Effectiveness

EDMS & EA Integration initiative

System & Process Improvement (e.g. Business Process Reengineering/Improvement)

Full Potential Performance

Focused Improvement: Consistency of Methods, Standards of Excellence, Assessments, Benchmarking

Nr, Ps, Dx

Change Leadership & Management: Full Potential Condition of Mind

Pervasive

Program & Project Management Discipline (Benefits Realization)

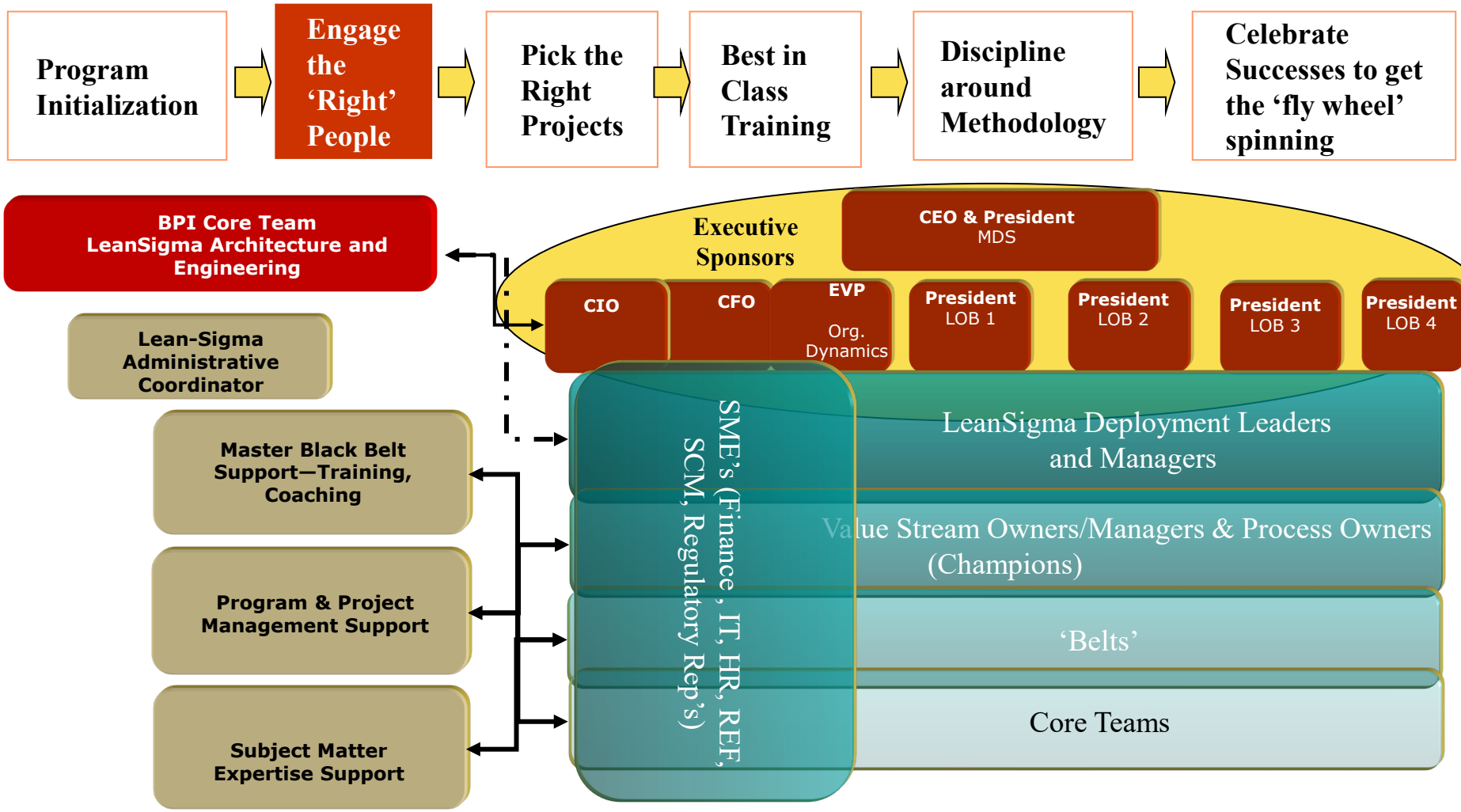
Constituency Value Exchange Management

Information & Technology Enablement to Provoke Timely & Effective Decisions and Actions

CBS Ben. Realization & Pervasive

EDMS & EA Integration initiative

Leadership Alignment & Support Infrastructure was a Critical Early Factor



09.03.2023

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

TRAINING ILSS:

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2. WHO THEN WHAT—Picking the Right People

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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).

Selecting the Right Belts Process Map

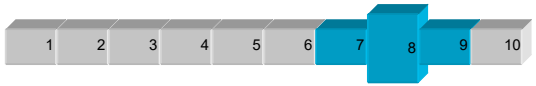
1. Belt candidates are identified as a normal outgrowth of an organizations performance management and development process;
2. Belt candidates are 'assessed' using a set of 11 dimensions by 2-3 people and companies are beginning to use profile instruments also.
3. The Deployment Manager or a Unit BB 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.

Augment Competency Model Assessments with Profile XT

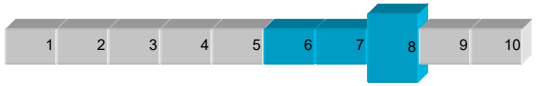
Profile for Thinking Style

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.

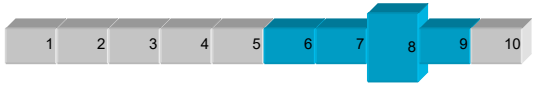
Learning Index – An index of expected learning, reasoning and problem solving potential.



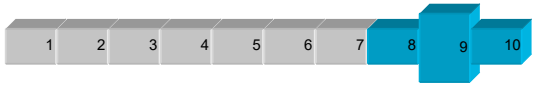
Verbal Skill – A measure of verbal skill through vocabulary.



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



Numerical Ability – A measure of numeric calculation ability.

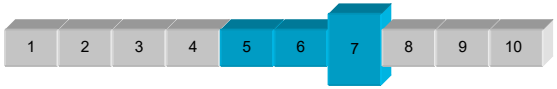


Numeric Reasoning – Using numbers as a basis in reasoning and problem solving.

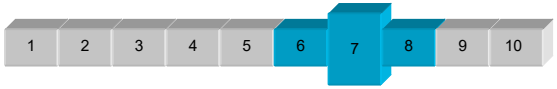
Profile for Behavioral Traits

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

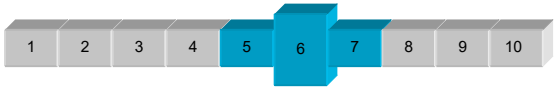
Assertiveness – Tendency to take charge of people and situations. Leads more than follows.



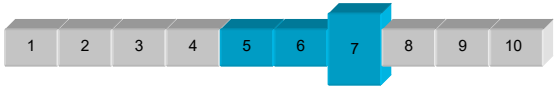
Sociability – Tendency to be outgoing, people-oriented and participate with others.



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.



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.

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5. CERTIFYING
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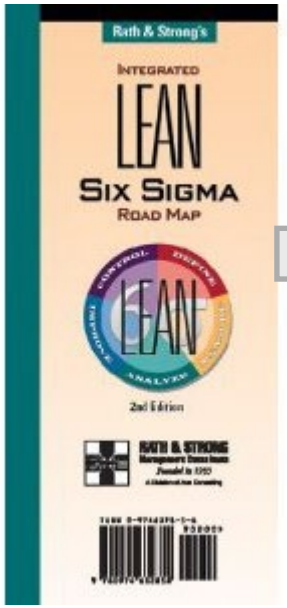
6. DEPLOYING
   - Introduce and employ Integrated Master Planning and Agile as the way to think and do projects to include the training (as a project).

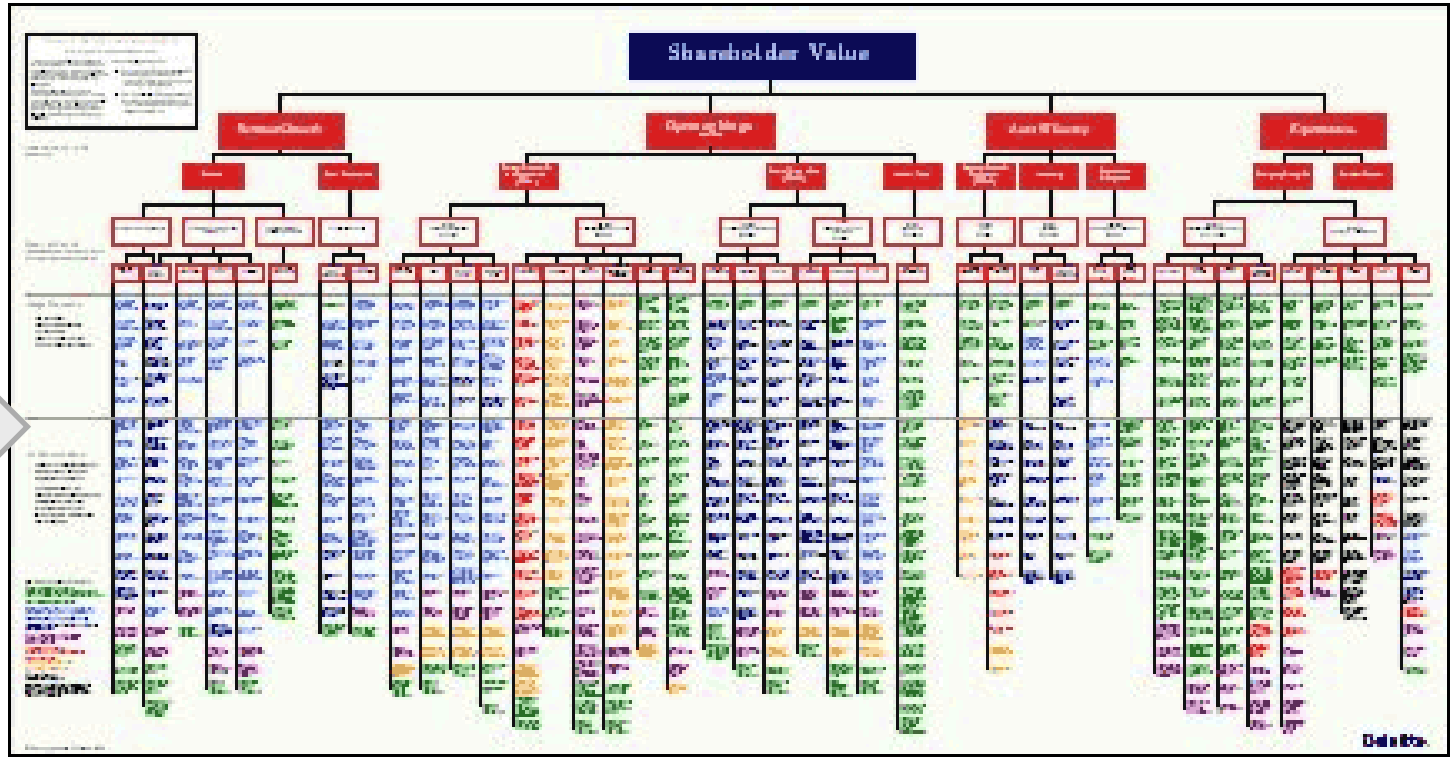
TEACHING: My top learnings from 15 years and over 50 'classes' (roughly 25 in industry, 25 in ISE at OSU)

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.

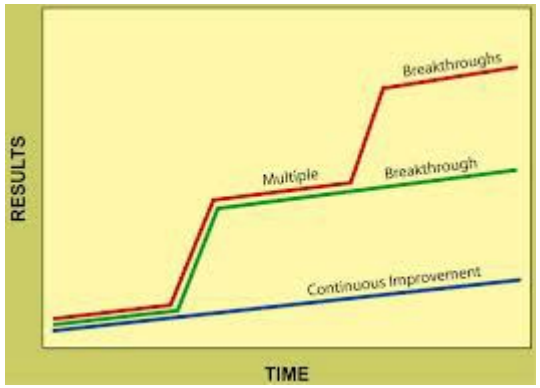
DMAIC Roadmap Drives Creation of Value

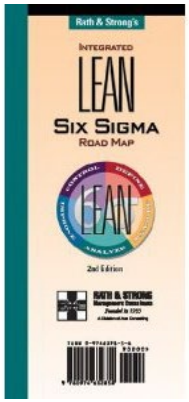


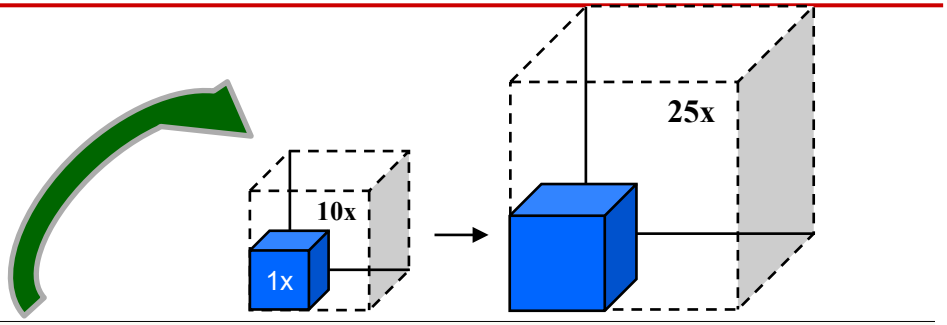


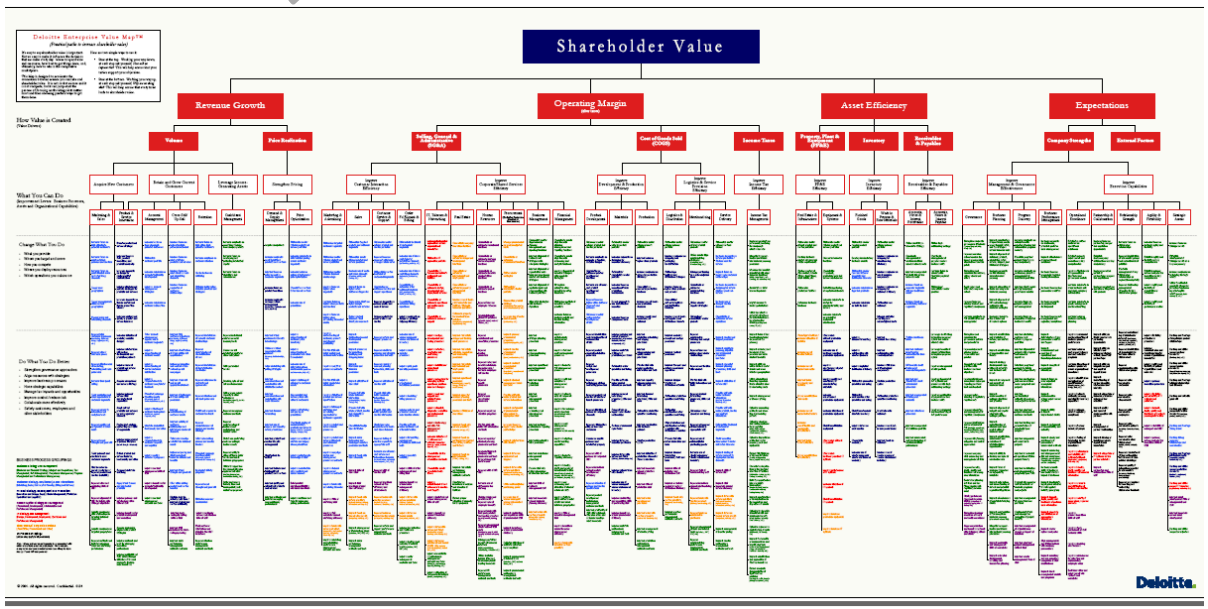
https://www.tribalmind.co/S3/tribalmind-live/Discoveries/GMhYUVFVg0aftdAuIZdoYw.pdf

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)









ISE
Integrated Systems Engineering

Deloitte.

Enterprise Value Map
Practical paths to increase shareholder value

TEACHING: Learning-Tip-Suggestion #2: don't under invest in physical simluations/Labs

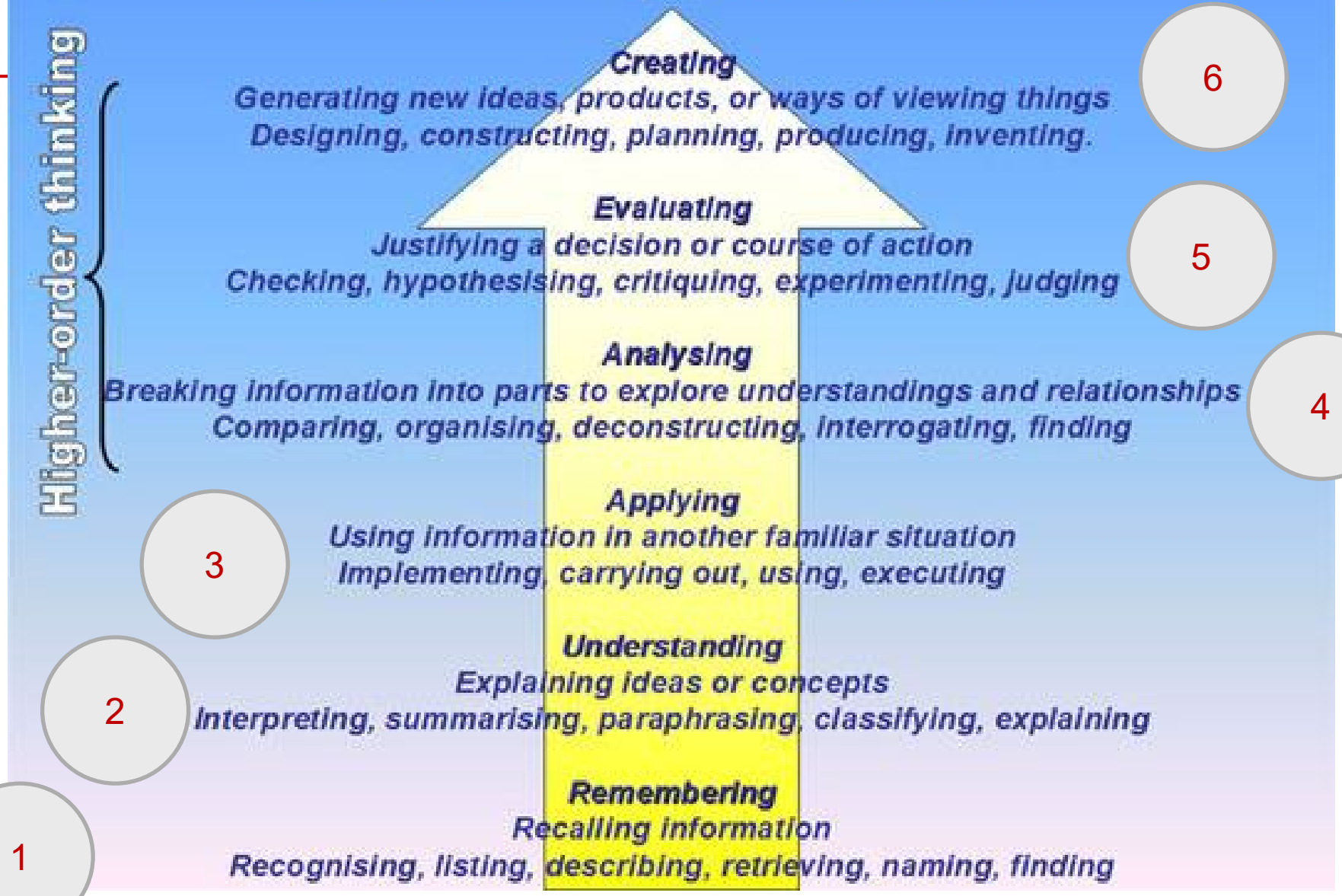
3. Physical and 'computer based' simulations are essential to ensuring that the 'student' (ISE UG or professional in your organization) grasps the level 2 to 3 bridge, transition.

   - 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 on-line 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



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.

MoreSteam®

Contact
James Swisher, IISE
James Swisher
jswisher@iise.org

Go to
iise.org/MoreSteam
For more information

INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS

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'
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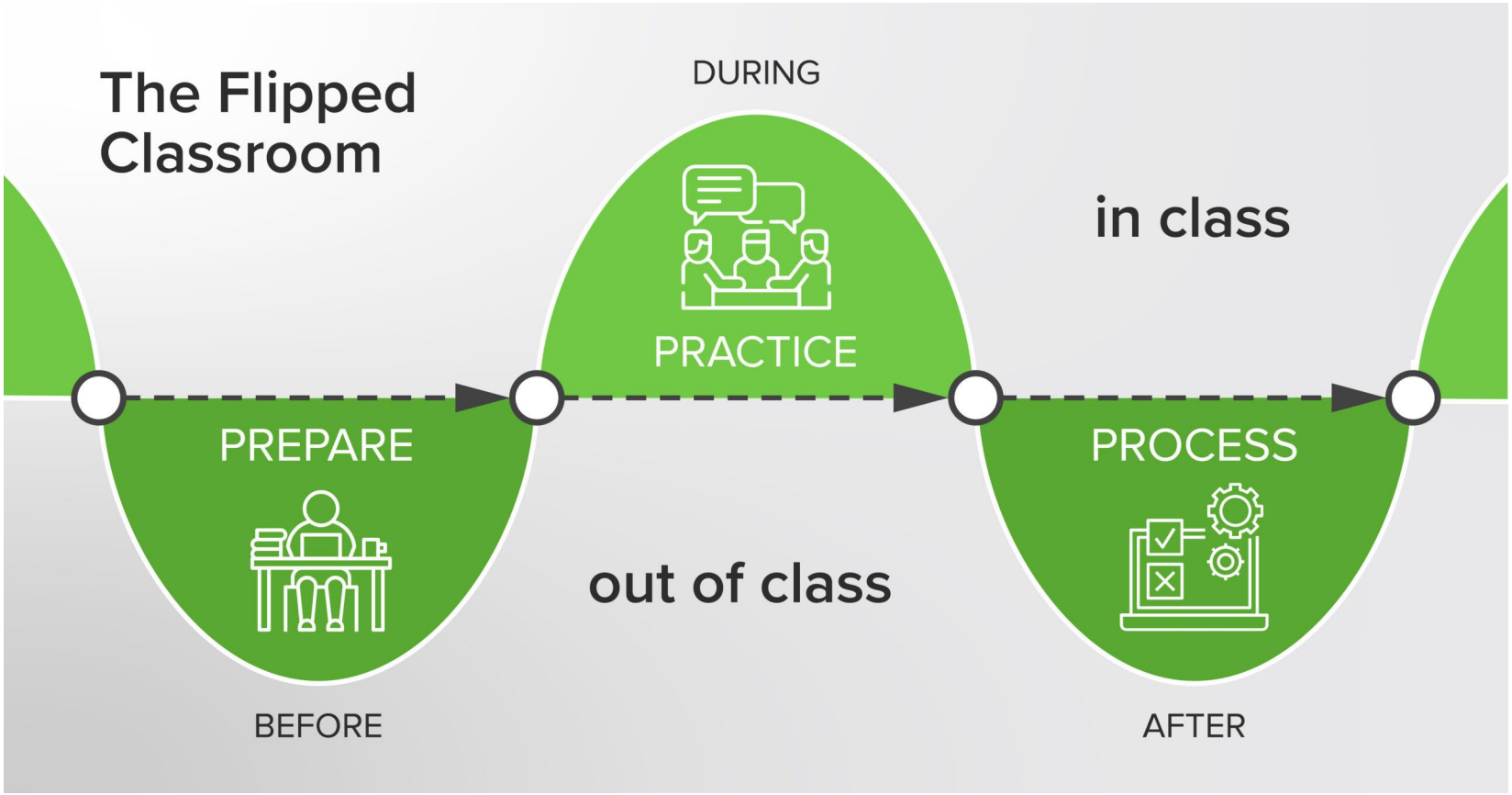
The training model is essentially a ‘flipped’ classroom method



TEACHING: Learning-Tip-Suggestion
Teach2Learn Modules

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

MoreSteam University℠

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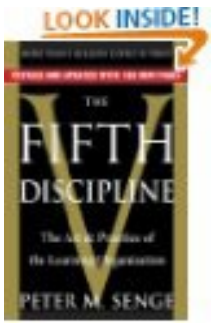
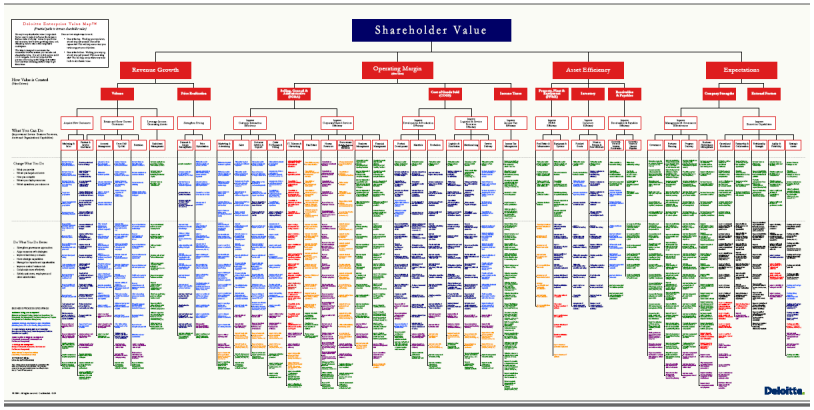
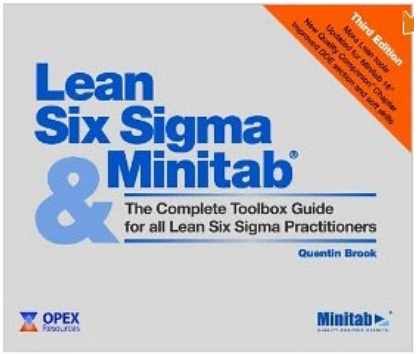
THE LEAN SIX SIGMA POCKET TOOLBOOK

MICHAEL L. GEORGE • DAVID ROWLANDS
MARK PRICE • JOHN MAXEY







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Minitab® 16
Statistical Software

Our new release makes analyzing your data easier than ever. Perpetual and introductory versions available for purchase now by students and instructors.

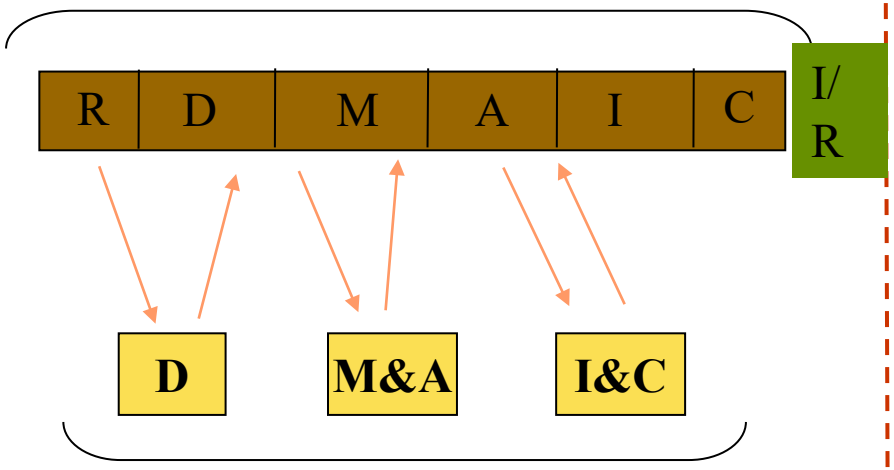
Buy or Rent from $29.99 USD.

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

Project Work



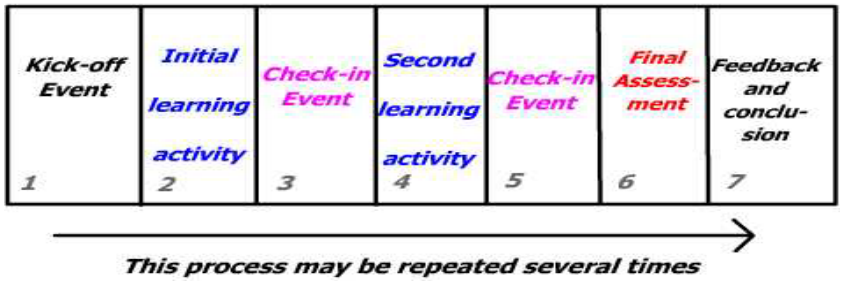
3 wks In-Class Training

Cheaper, Better, Faster

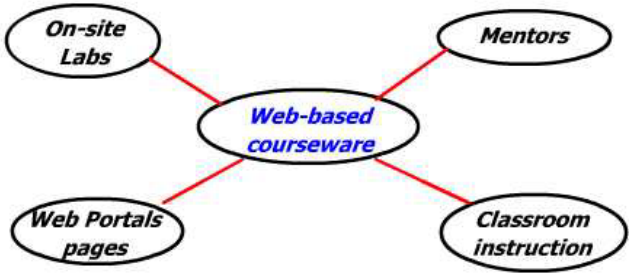
Enhanced Training Model

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

Program flow Approach



Core-and-Spoke Approach



TEACHING: Learning-Tip-Suggestion
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.

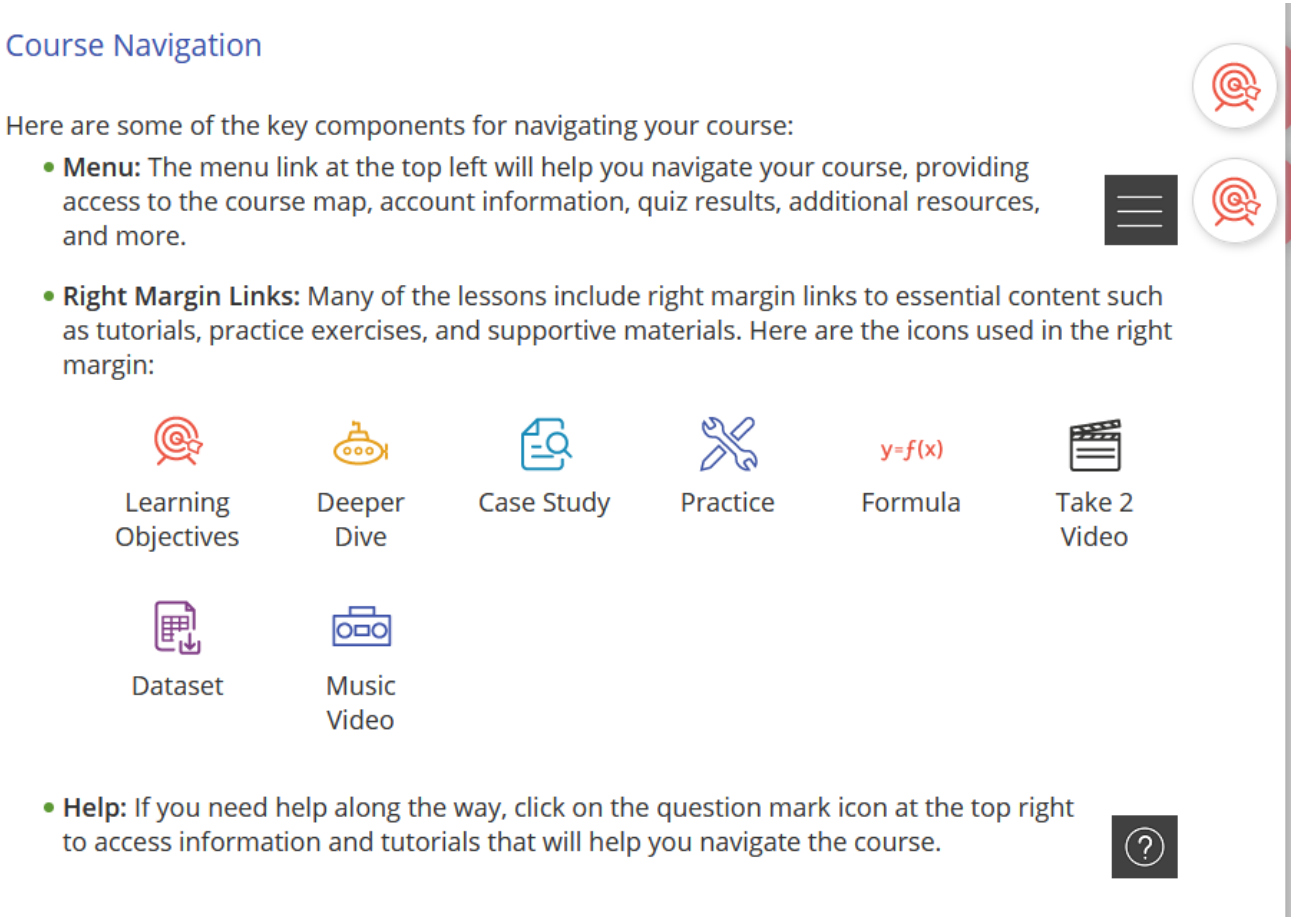
Moresteam, like most LMS's, provides visibility for what's being done, when, etc.

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

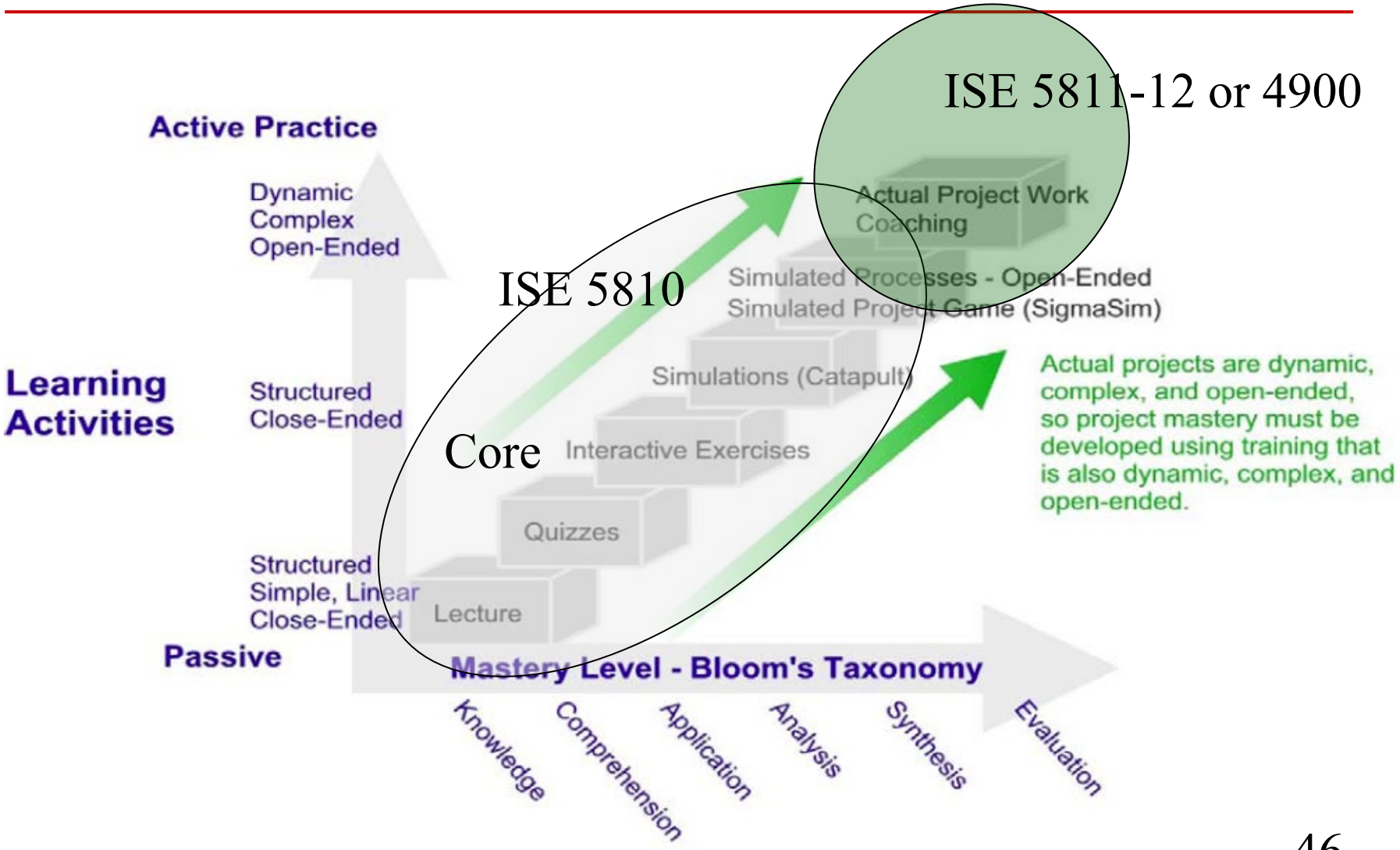


PROGRAM FEATURES

THE OHIO STATE UNIVERSITY

- 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…



Standard 4 year path model

Management Systems: Integrated LeanSigma Curriculum

Fall	Spring	Summer	Fall	Spring
Integration and Practicum with ISE 5811-12 Case Studies		**Internship with Industry Collaborator /Partner** **Reduction to Practice with ILSS methods and tools** **(Potentially Green Belt Certification)**	**Continued Practicum of ILSS Case Studies**	
ISE 3200—Linear and Integ Programming	ISE 3210—Non-Linear Programming		ISE 4100—Stoch Modeling & Simulation	General Educ
ISE 3600—Workplace Ergo	ISE 3800—Project Management		**ISE 5811—Certification Capstone**	**ISE 5812—Certification Capstone**
ISE 2500—Intro to Manf Engineering	ISE 4120—Quality Control & DOE		Tech Elec	Tech Elec
ISE 3700—Cognitive Systems Eng.	ISE 3400—Prod Plan & Fac Design		Tech Elec	Tech Elec
General Educ.	**ISE 5810—ILSS Foundation Course (BB)**		General Educ	Tech Elec

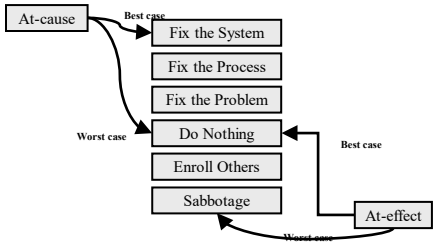
Process Improvement &/or Design Methodology

	Pick Right Project	DEFINE	MEASURE and/or CONCEPT DESIGN	ANALYZE and/or DETAILED DESIGN	IMPROVE and/or OPTIMIZE	CONTROL and/or VERIFY
2400: Work Design	• Current State Assessment	• Work Measurement • Current State Capabilities • •	• Efficiency, flow, cost, safety, productivity analysis	• Standard Work • Problem Solving Tools	• Mistake Proofing • Process Documentation	
2040/3800: : Eng Econ & Proj Mgmt	• Business Case Development • Project Planning • Chartering	• Cost Breakdown Structure • Program and Project Measurement	• Cash Flow Analysis • Net Present Value	• Evaluation Studies		
3470: Stat	• Exploratory Data Analysis	• Exploratory Data Analysis • ANOVA	• Confirmatory Data Analysis: Hypothesis Testing		• Hypothesis Testing	
2500/3400: Mftg Sys Eng.	• ERP analysis	• Production System Assessment	• Economic Order Quantitty	• Line Balancing • Inventory Control • Facility and Equipmtnet Layout	• Production Control	
3600/3700: HFE	• Stress and Strain Assessments •	• Design Principles • Initial Assessment Tools for work, environment, human	• Fault Tree Analysis • Stress and Strain Analysis	• Displays and Controls • H/C Interface	• Training Plans	
3200/3210: Optimization	• Framing the Optimization Opportunity, deciding when to Optimize	• Network Analysis • Modelling	• Linear Programming	• Linear, Sensitivity Analysis, Discrete, Dynamic, Nonlinear Optimization	• Resiliency evaluation	
5100: Stoch Proc & Sim	• Building the Model	• Data Model/Input • Shapes of Distributions • Queueing Theory	• Output Analysis	• Analyze and Compare	• Ongoing Model application and refinement	
4120: QC & DOE	• Quality Policy and Principles	• Statistical Process Control • Model Design and Factor Screening	• Reliability Analysis	• Sampling Plans	• PDCA	
5810: ILSS	• Stakeholder Analysis • Communication Plan • Voice of Customer (QFD)	• Measurement Plan • Value Stream Mapping	• FMEA • Value Stream Analytics	• Kanbans/Buffers • Mistake Proofing • Change Management	• Visual Management Systems • Sustainability	
4900/5811-12: Capstone	• Team Development • Project Start-up	• Learning how to get data/facts and then analytic practice	• Extracting information form the measurements • Design Practice	• Developing Solution Elements • Piloting	• Evaluation Studies • Control Principles and Practices	

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

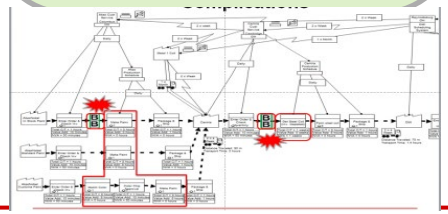


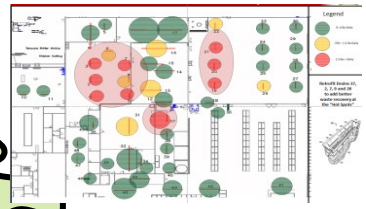
Personal and Professional Mastery:

- 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

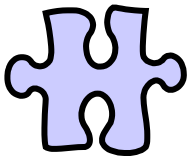
Walmart — Save money. Live better.
The Ohio State University Wexner Medical Center
CAMERON
BOEING
John Deere
Walt Disney

See Kristen or Dr. Sink for more….

The Ohio State University

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!



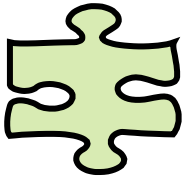
Life Sciences, Health Care & Social Services

ABBOTT

Wexner Medical Center

OhioHealth
BELIEVE IN *WE*

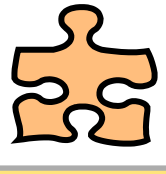
National Church Residences
EXCELLENCE THAT TRANSFORMS LIVES
Welcome
A Commitment to Quality, Affordable Housing



Retail & Food Processing Services

DONATOS
PIZZA SUBS SALADS

Kahiki
RESTAURANT QUALITY



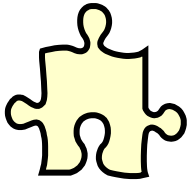
Financial & Other Transactional and Shared Services

Grange
Insurance

THE OHIO STATE UNIVERSITY Business and Finance

THE OHIO STATE UNIVERSITY OFFICE OF STUDENT LIFE

NATIONWIDE INSURANCE
Nationwide is on your side



Production, Manufacturing, & Process Industries

EMERSON
Network Power

METTLER TOLEDO

SHERWIN-WILLIAMS

SUTPHEN

AkzoNobel
Tomorrow's Answers Today

Diamond Innovations

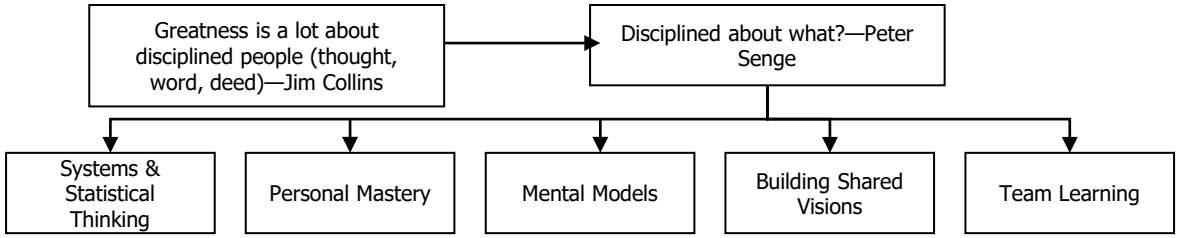
TRANSMET CORPORATION
RAPID SOLIDIFIED METALS

AMERICAN BRONZING company EST. • 1934

ROYAL Building Products
An Axiall Company

See Dr. Sink for more….

THE OHIO STATE UNIVERSITY



The OSU ISE view (one view)

- 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

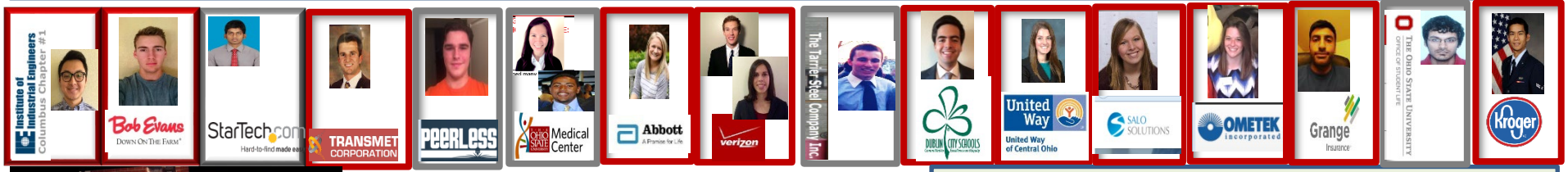
College of Engineering

Integrated Systems Engineering

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

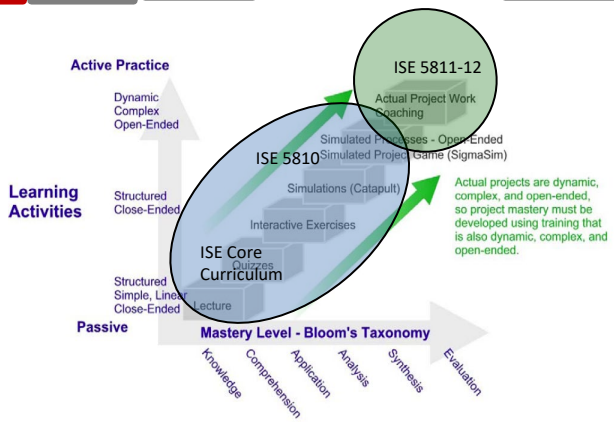
370 candidates through the program: 4 Black Belts & 150 Green Belts Certified (25+ in-process) & 20 Yellow Belts

>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.

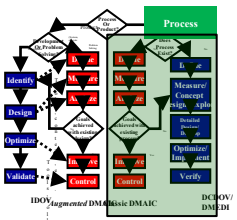


Blended Training Model

MoreSteam University℠

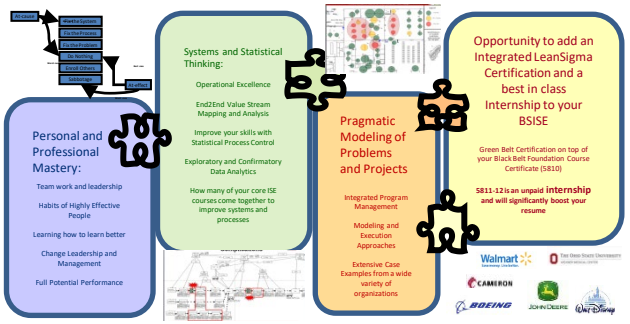
EngineRoom®

Black Belt Certificate

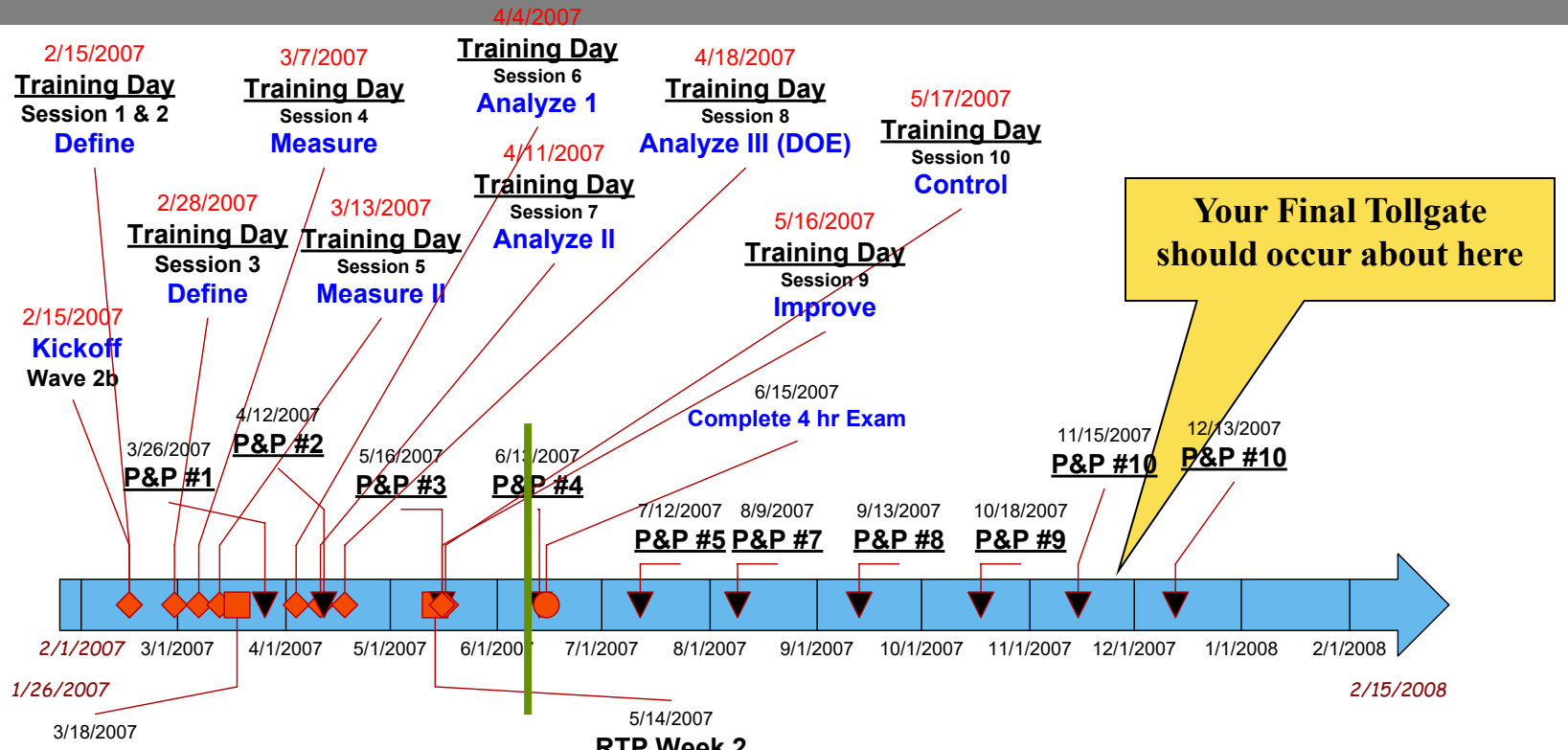


SEASONING CANDIDATES TO MAKE BIG CONTRIBUTIONS

Integrated Change Leadership & Management:
Shared Vision/Creation Skillful, Mental Models, Team Learning, Personal & Professional Mastery



Class 3B Planned Blended Training Schedule (LS Knowledge/Skill Acquisition)



RTP Week 1
(Reduction to Practice)

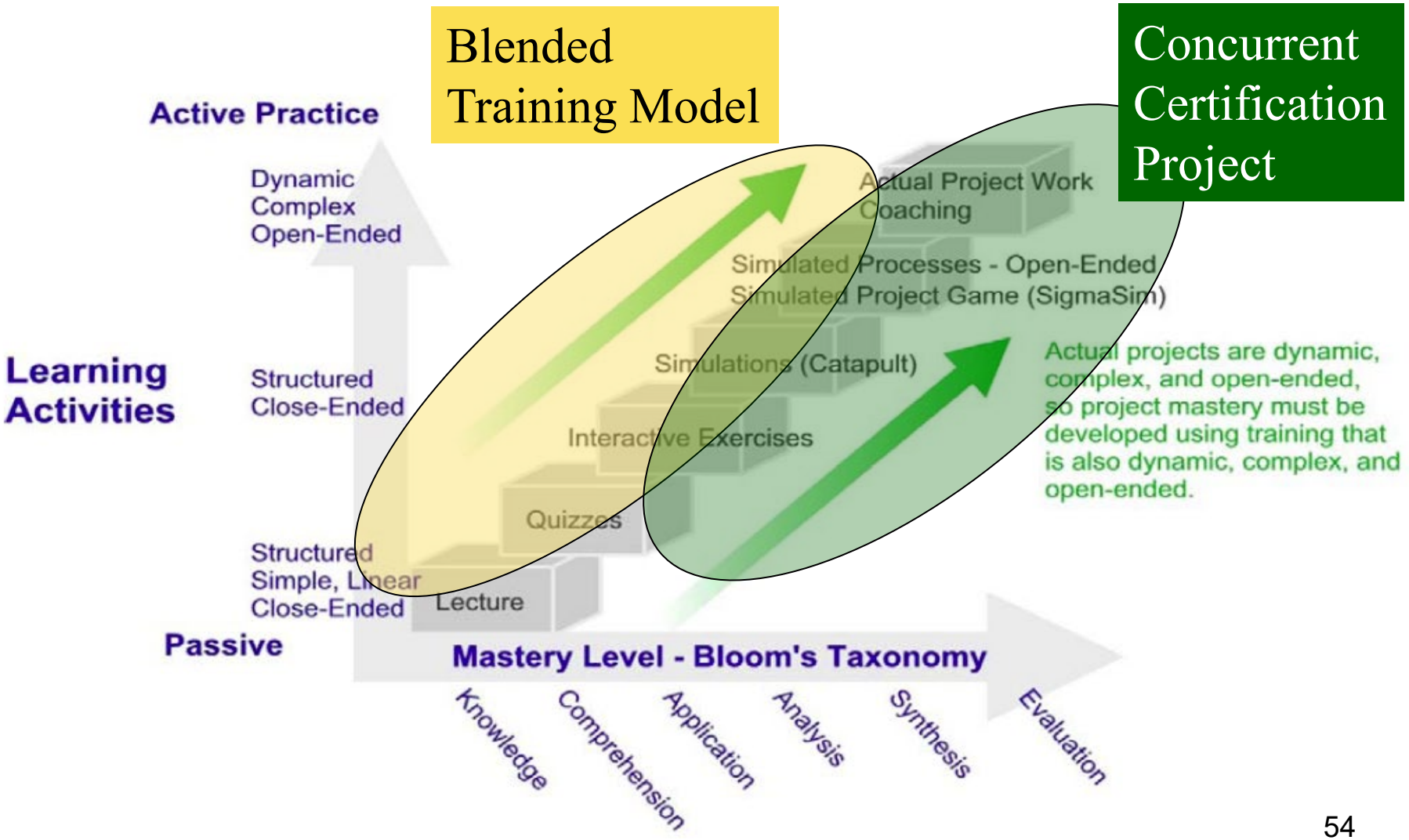
- ❑ Lean Simulation
- ❑ SPC Simulation
- ❑ Process Capability Simulation
- ❑ Value Stream Mapping Simulation
- ❑ D-M-A Roadmap Project Workshops
- ❑ Graphical & Statistical Analysis (student data)
- ❑ Intro to Inferential Statistics
- ❑ Homework
- ❑ Science Fair (Project Round Robins)
- ❑ Other 4 Discipline Exercises
- ❑ Team Dean 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

09.03.2023

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.

Fundamental Questions and Objectives

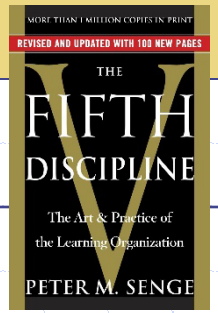
At perhaps the highest level the 'roadmap' for ILSS is this:

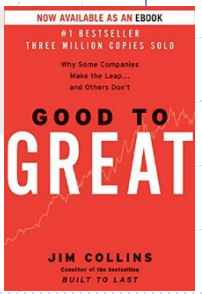
1. How does the system/process work?
2. How does it perform?
3. Why is it under-performing?
4. How do we close performance gaps?
5. How do we ensure our improvements worked, are working, and Enterprise Value is improved?

Blending Peter Senge *5th Discipline* with Jim Collins *Built to Last* and *Good to Great* : Foundational Model for the Program

Greatness is a lot about disciplined people (thought, word, deed)

Disciplined about what?



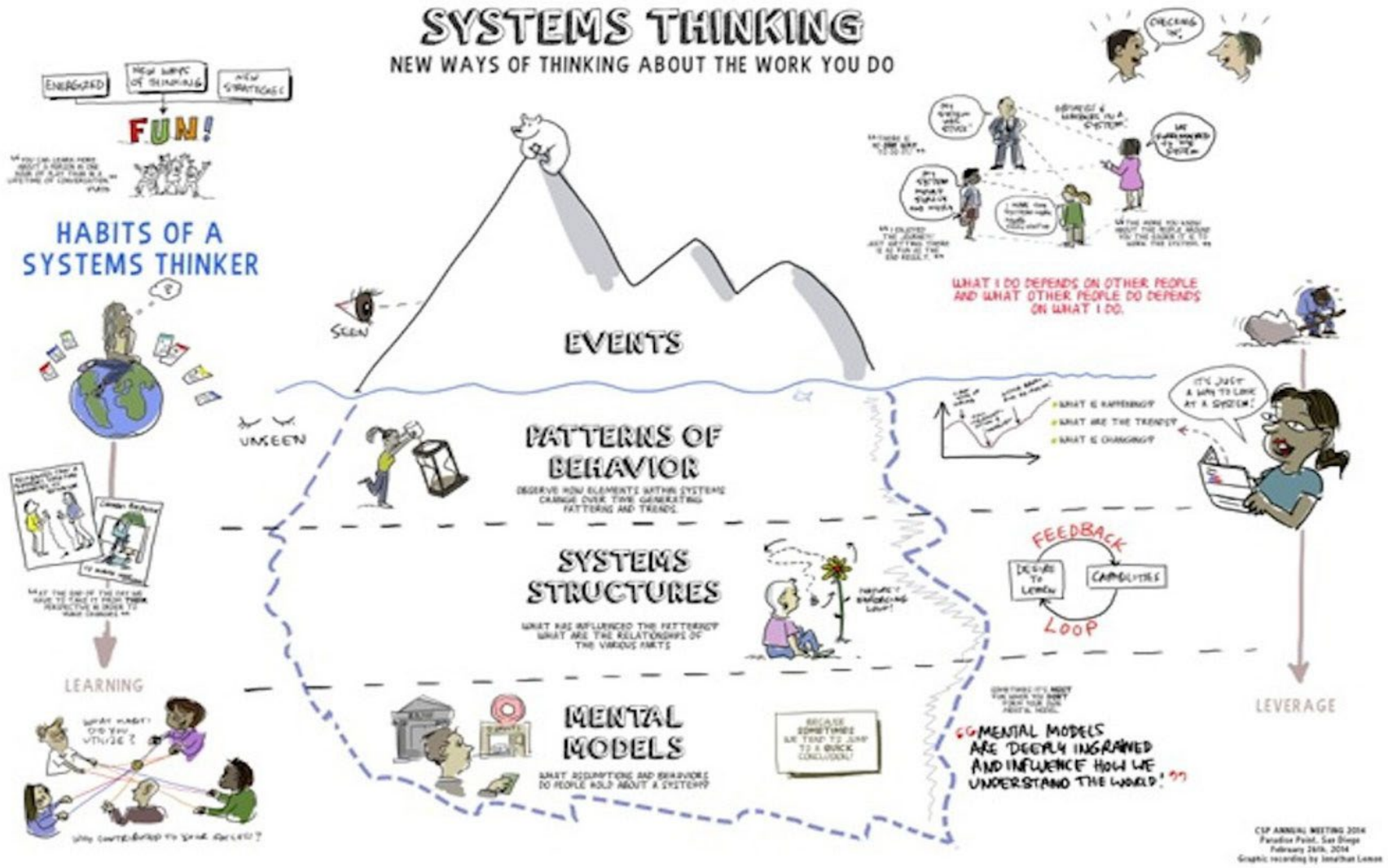


- Systems & Statistical Thinking
- **Personal Mastery**
- **Mental Models**
- **Creation Skillful**
- **Team Learning**

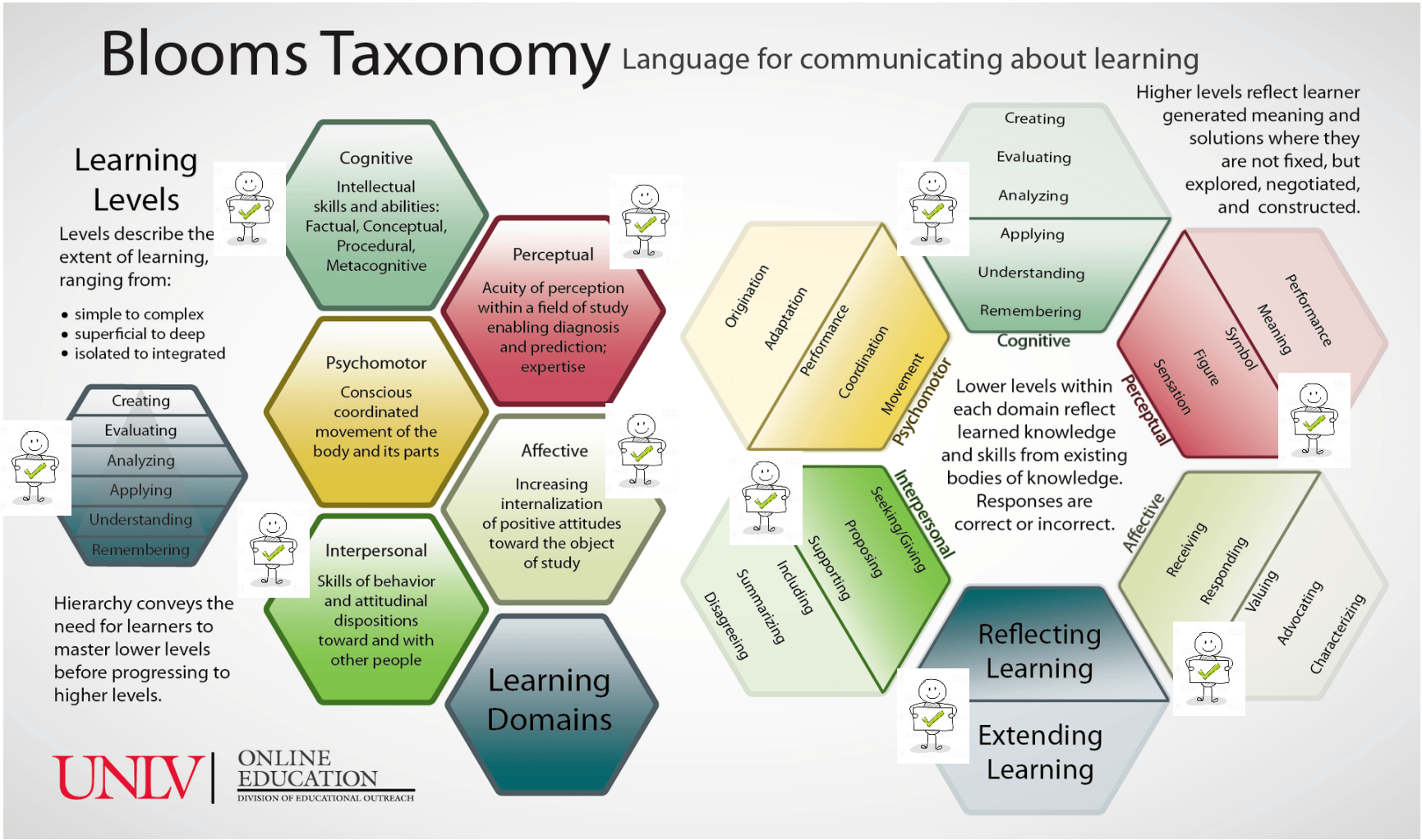
ISE & ILSS

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



INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS

To do this it was determined that organizations needed Process Improvement Specialists—The New Industrial and Systems Engineering

THE LEAN SIX SIGMA BELT SYSTEM

WHITE
- Understands the structure and goals of Lean Six Sigma
- Uses basic Lean Six Sigma vocabulary terms
- Reports process issues to green and black belts

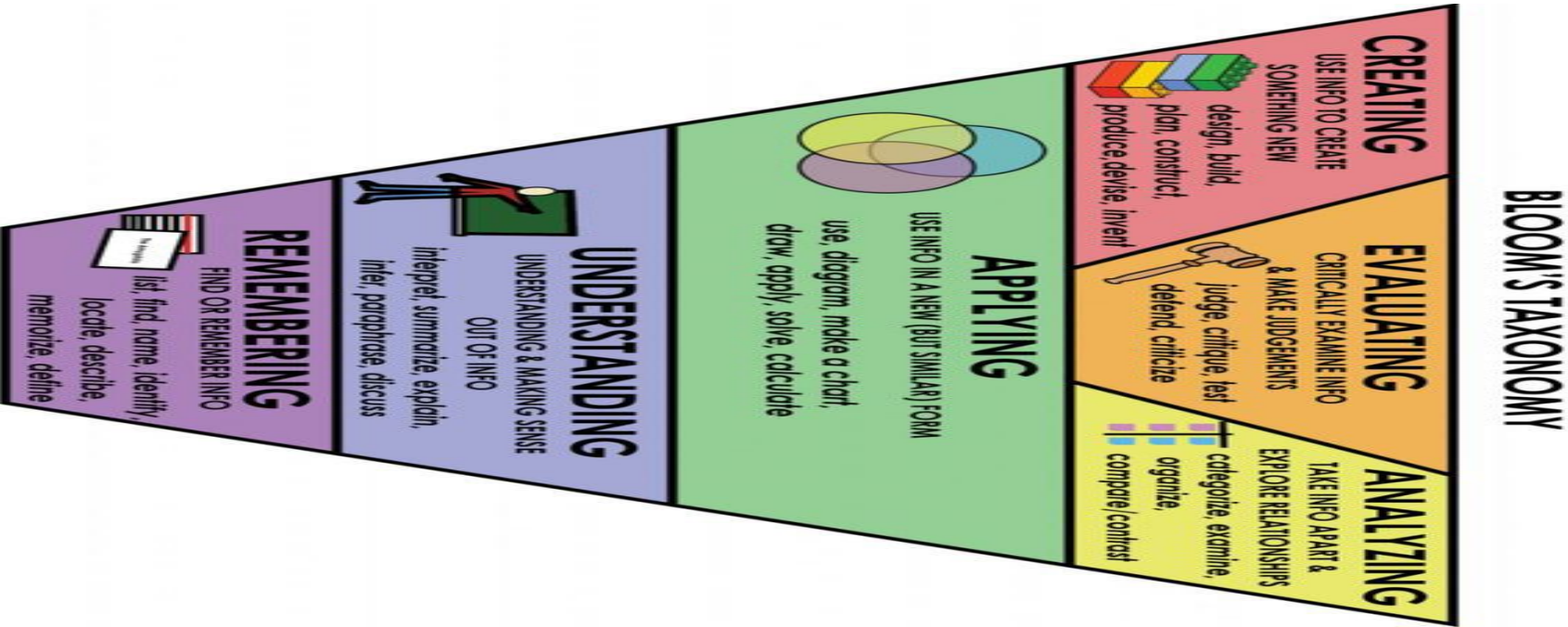
YELLOW
- Understands basic Lean Six Sigma concepts
- Reports process issues to Green Belts and Black Belts
- Participates on project teams and receives just-in-time training

GREEN
- Starts and manages Lean Six Sigma projects
- Has Lean Six Sigma expertise but in less detail than Black Belts
- Provides just-in-time training to others

BLACK
- Can report to a Master Black Belt
- Has advanced Lean Six Sigma expertise
- Functions as a coach, mentor, teacher, and project leader for project teams

MASTER BLACK
- Works with leaders to identify gaps and select projects
- Coaches, mentors, teaches, monitors, and leads projects
- Responsible for Lean Six Sigma implementation and culture change

CHAMPION
- Executive leader who drives the initiative
- Helps select projects and remove barriers for project teams
- Supports change and develops a Lean Six Sigma culture



Start with End in Mind—make it a pull rather than a push!! Have to get them to nail DONE!!!

THE OHIO STATE UNIVERSITY

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?

Tension Seeks Resolution

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

MoreSteam University℠

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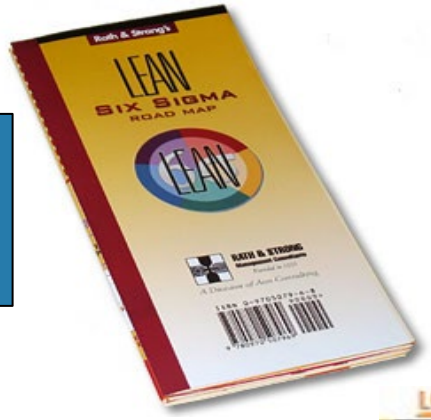

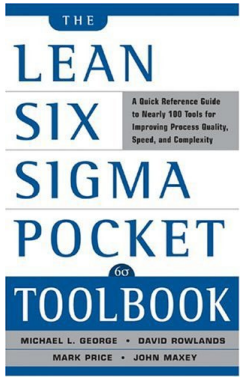

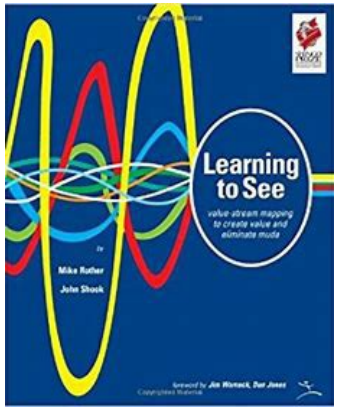

Visio

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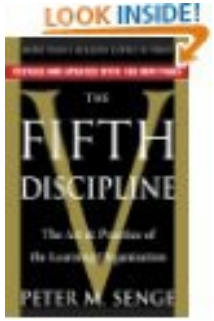
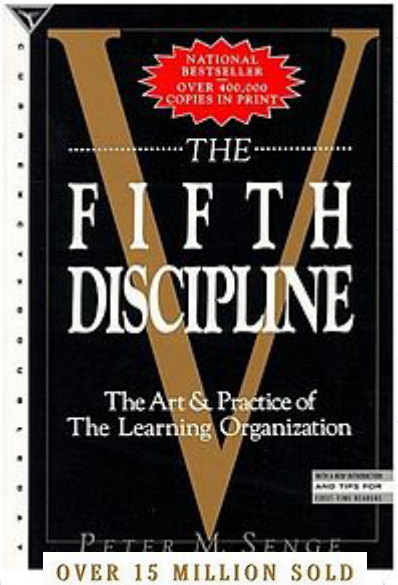
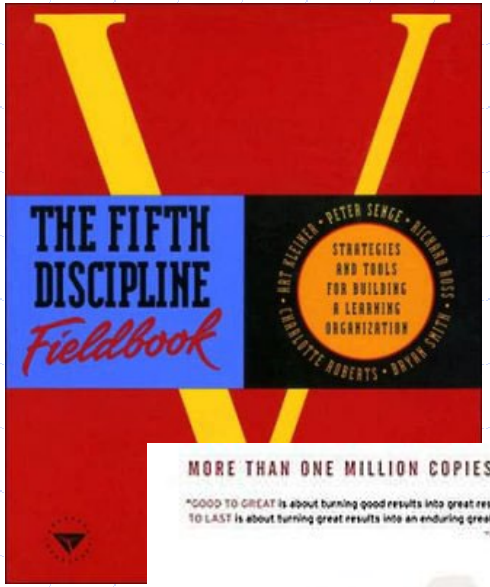
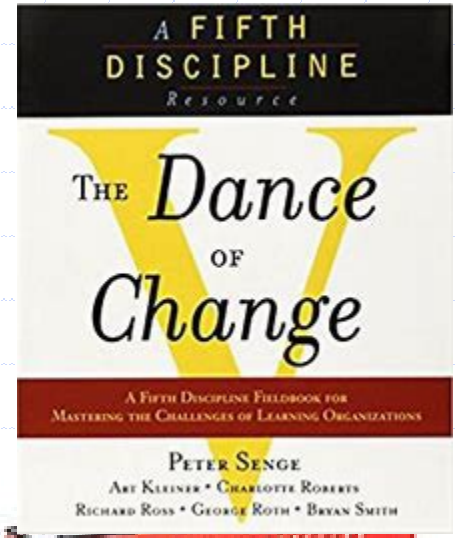
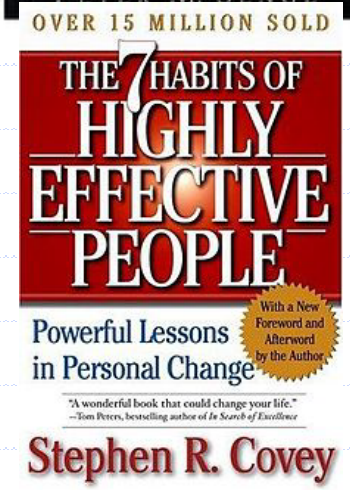


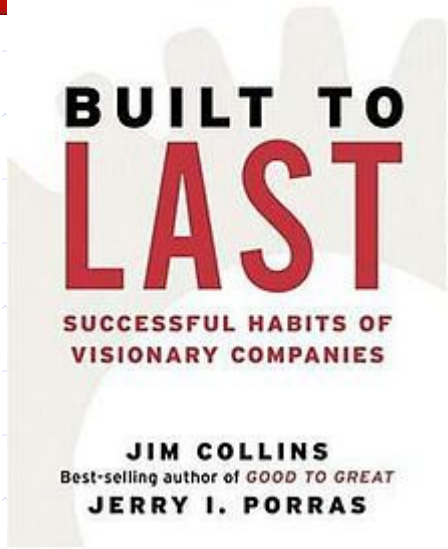
We augment our training pretty heavily with additional resources and hence end up with “dark” green belts and black belts….

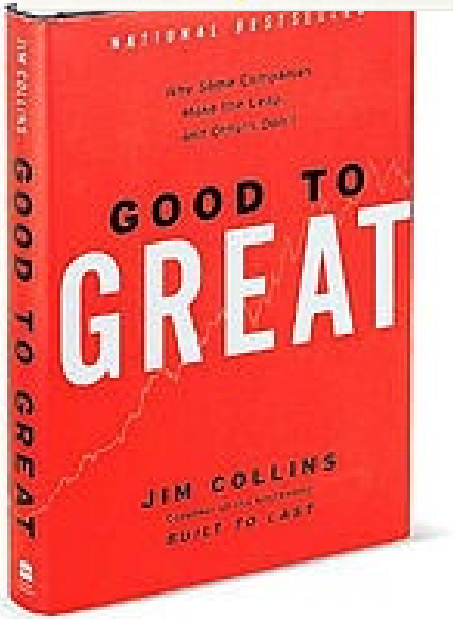




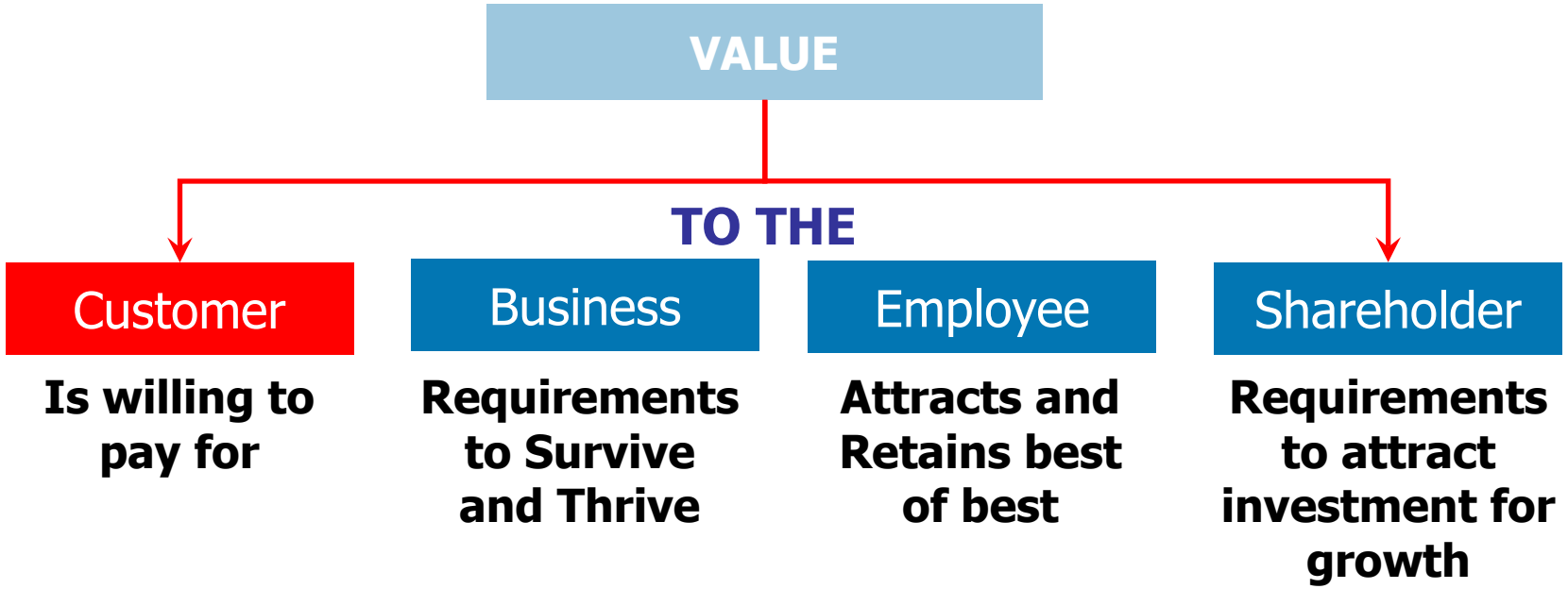








ILSS Overarching Principle: Value is Defined by the Customer



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

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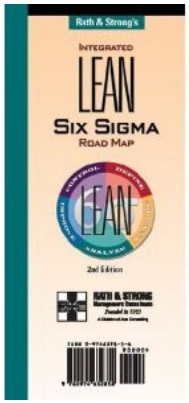
Roadmaps for Lean, SixSigma and Integrated Lean Sigma as well as DCDOV are easy to find on the IoT

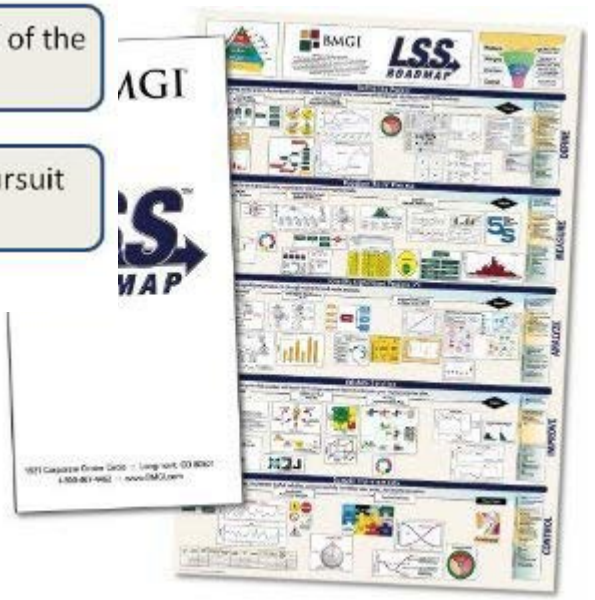
Six Sigma

- **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

Where to start

5S

1 – Structure
- Work environment
- Procedures & instructions
- Abnormalities visible

Kaizen

2 – Overview & Insight
- Visual Management KPI's
- WIP control
- Continuous improvement culture

Lean

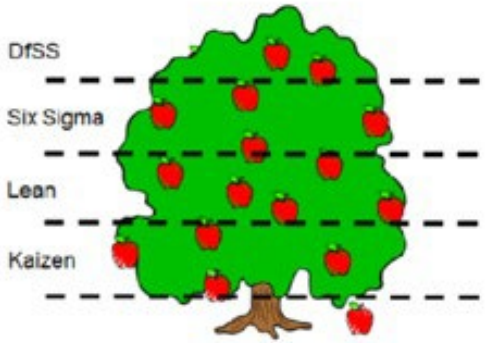
3 – Stability
- Stable processes
- Eliminating Waste
- Flow & Pull

6 Sigma

4 – Capability
- Reducing variation
- In-process control
- Statistical tools

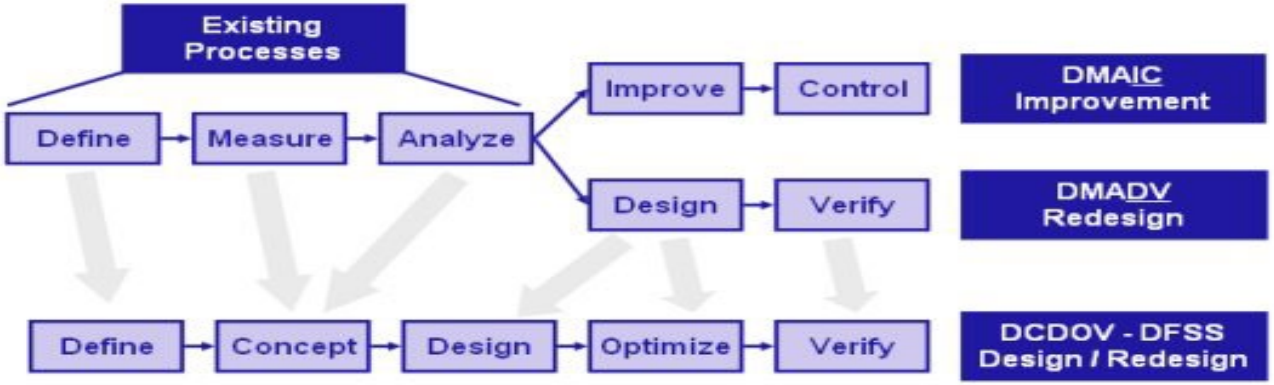
DfSS

5 – Robustness
- Robust processes
- Design for Six Sigma
- Quality Function Deployment



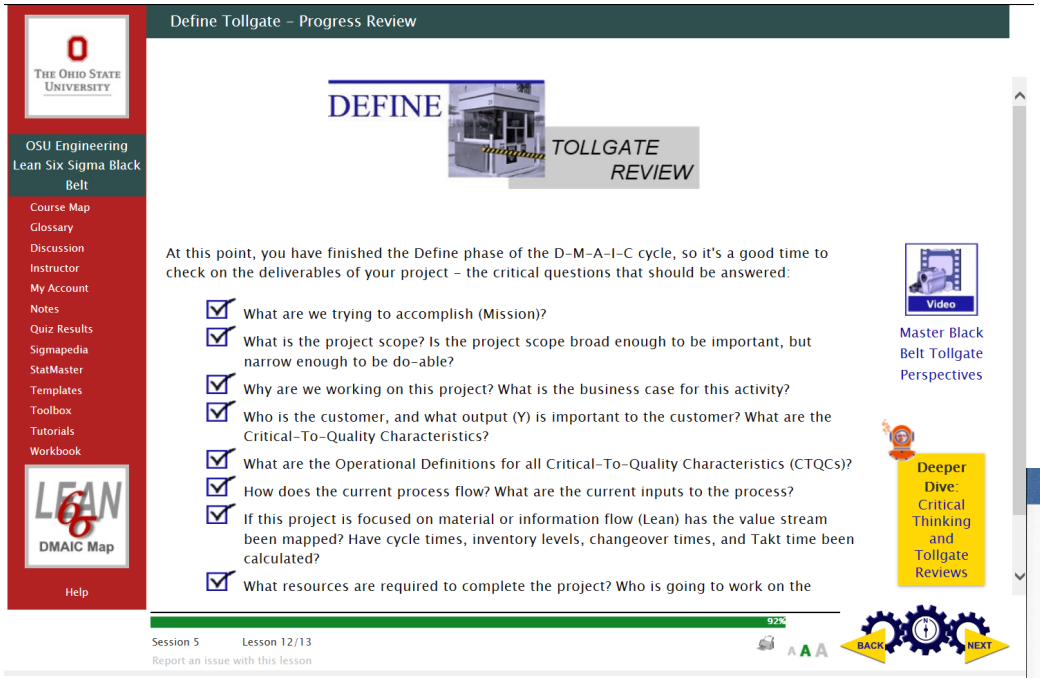
The Framework- Design for Lean Sigma (DfLS)

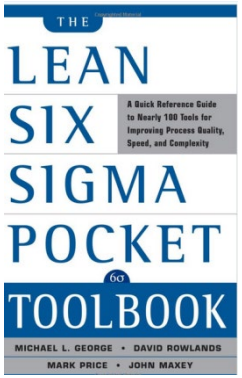
		Goals
D	Define	Obtain customer needs and wants.
C	Concept Development	Develop Design Feature/functional requirements based on customer needs and wants
D	Design Development	Identify engineering and process parameters based on the design features/functions requirements
O	Optimize Design	Identify optimal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

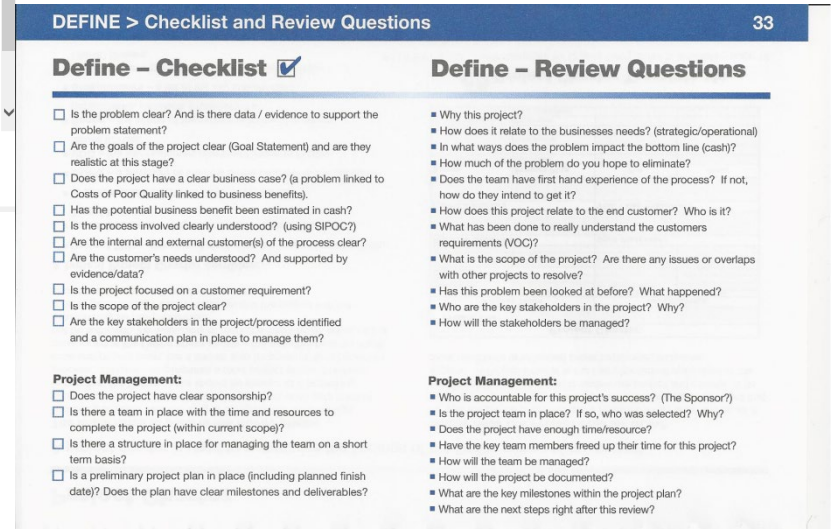


"We cannot solve our problems with the same thinking we used when we created them."
Albert Einstein

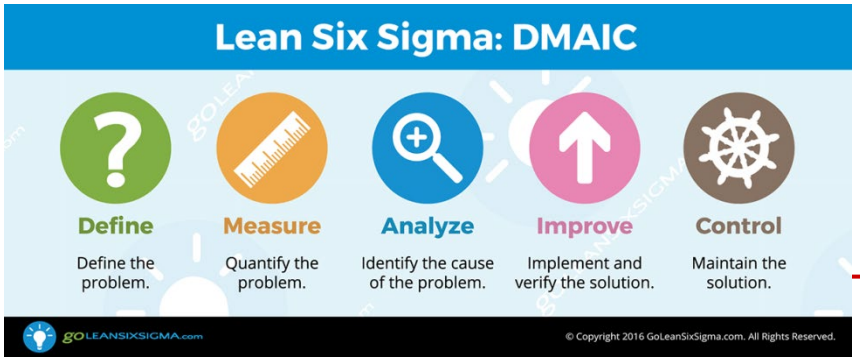
Check Lists for you to help you prepare for Stage and Gate Meetings (you are only limited by how intentional you are as a learner today)







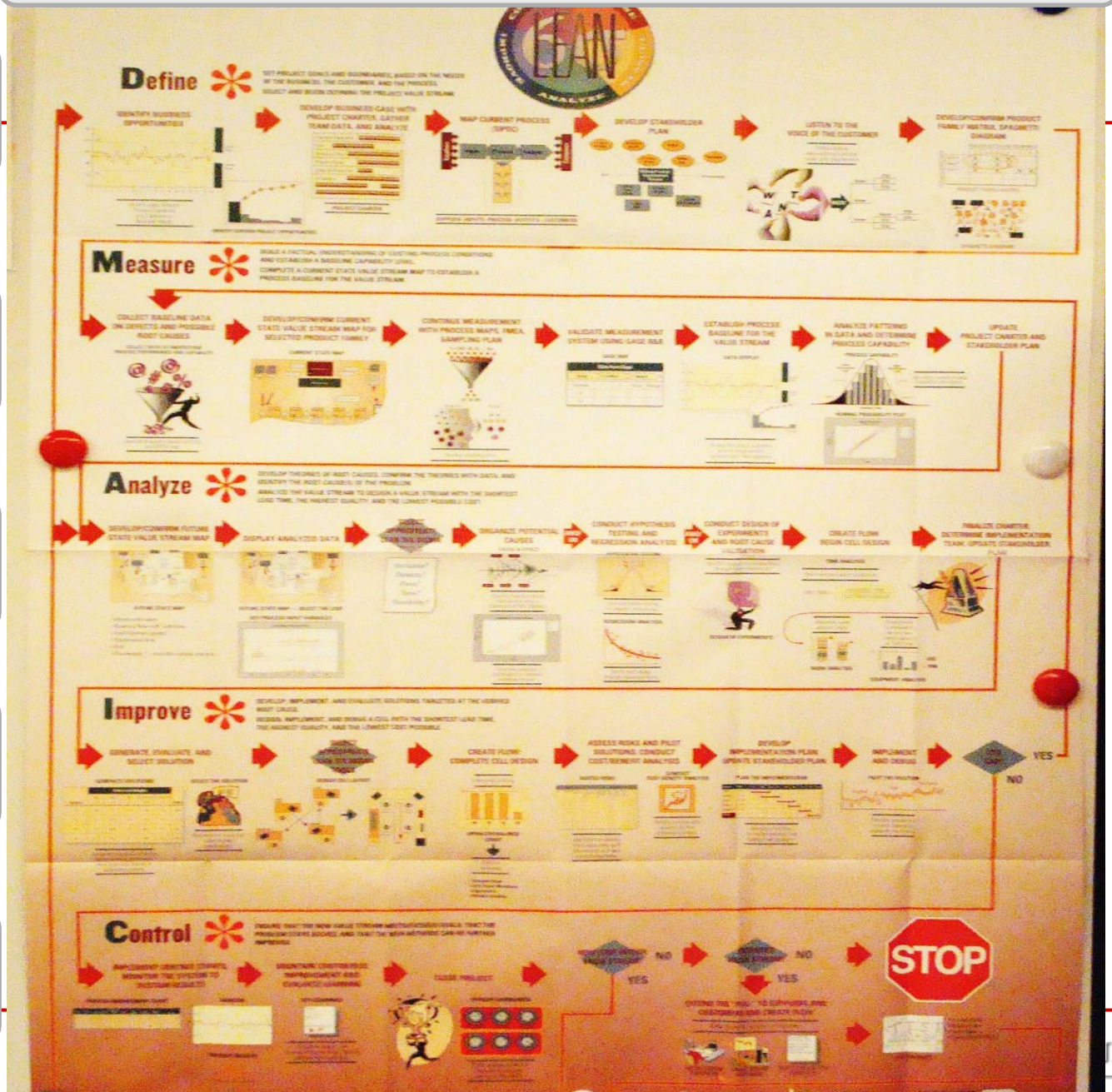
https://www.dmaictools.com/dmaic-define



Start w/

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

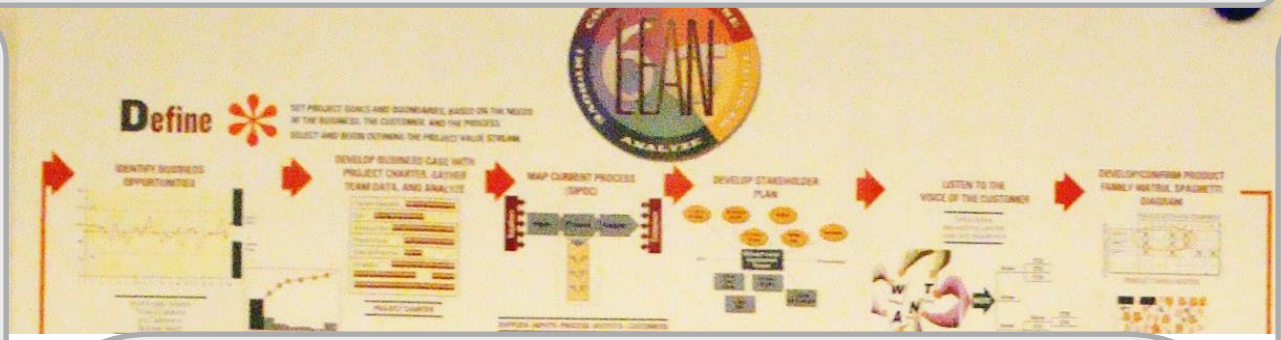
End w/



Start w/

- 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"

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



- 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

End w/

- 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

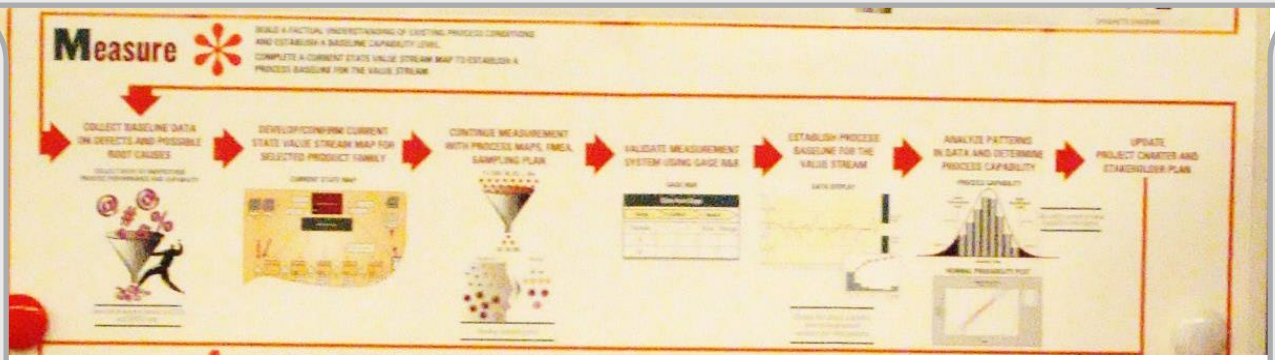
1. What's the 'it'? Meaning what's the problem or opportunity?
2. Why is this important? Voices before and after.
3. What is DONE?
4. Who's on the team to help me get this to DONE?
5. How do I plan to crack the code on this, get to DONE?
6. When will we be DONE?
7. Stage Gates along the way?
8. What's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

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

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

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 IISE 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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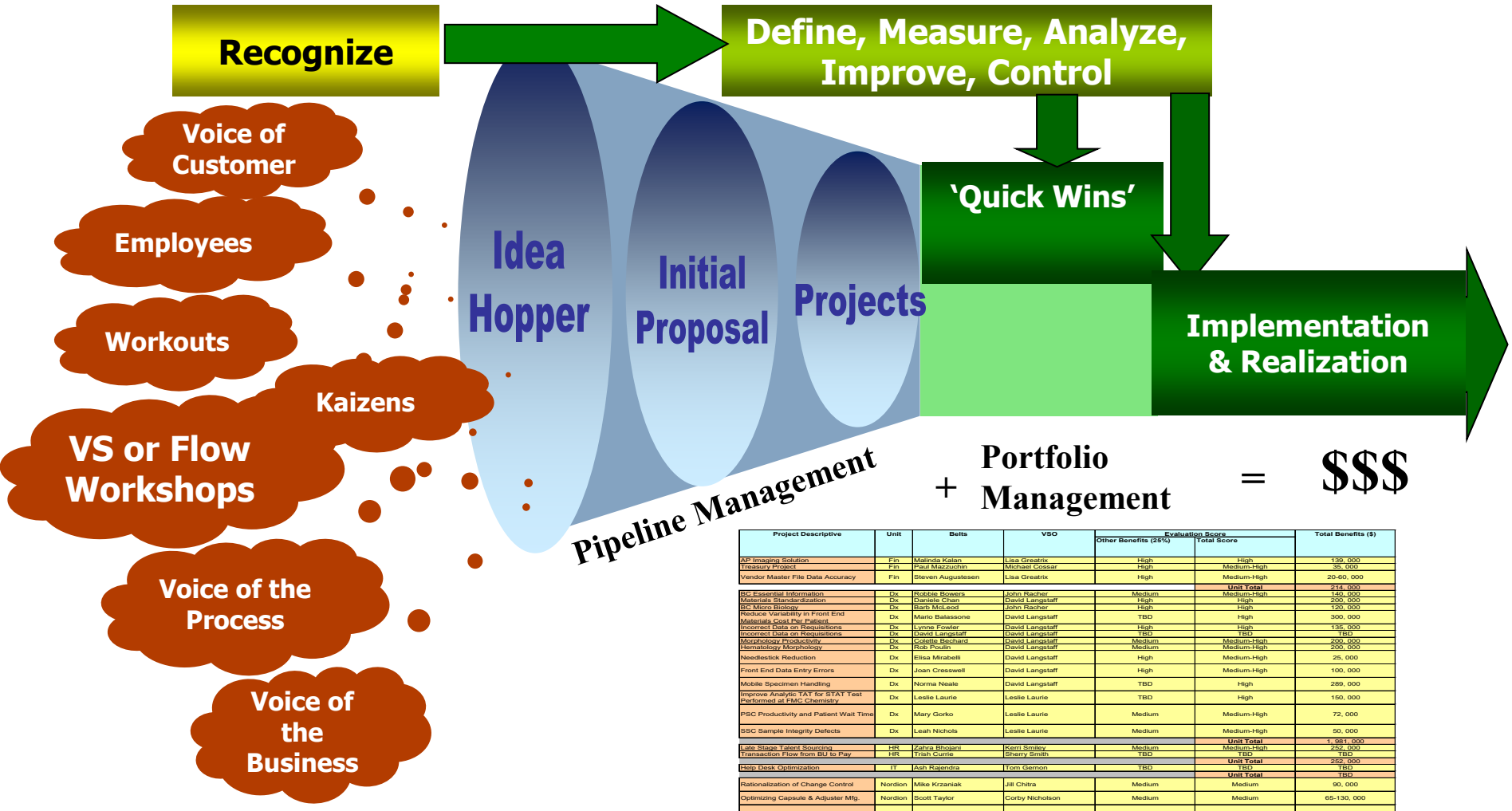
DOING: Learning-Tip-Suggestion
Picking the Right Projects

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.

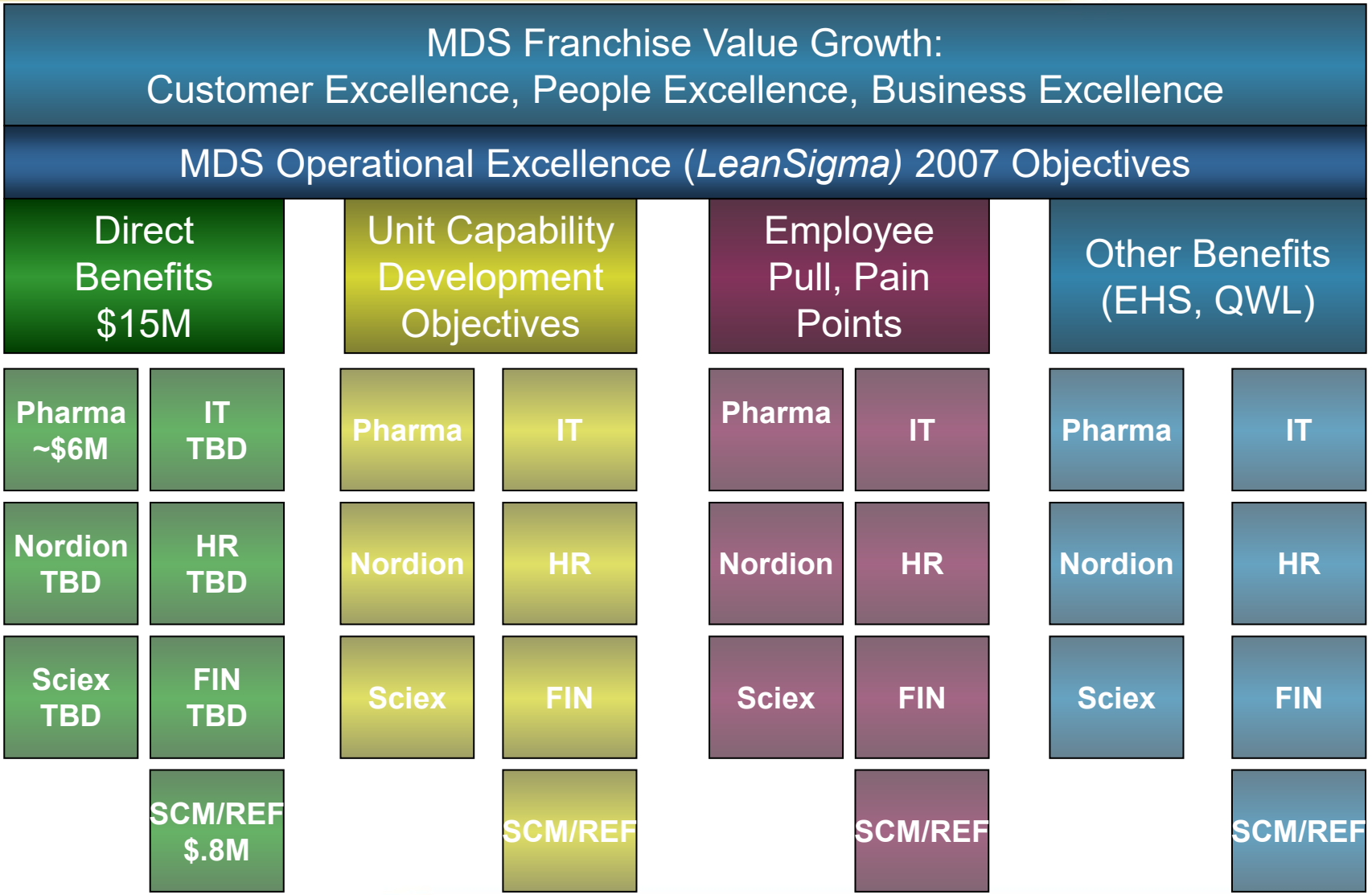
- Align the projects in units in support of enterprise OKR's as much as possible but be aware that there are drivers and enablers and some enabler work is required.

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



Project Descriptive	Unit	Belts	VSO	Evaluation Score		Total Benefits ($)
				Other Benefits (25%)	Total Score	
AP Imaging Solution	Fin	Malinda Kalan	Lisa Greatrix	High	High	139, 000
Treasury Project	Fin	Paul Mazzuchin	Michael Cossar	High	Medium-High	35, 000
Vendor Master File Data Accuracy	Fin	Steven Augustesen	Lisa Greatrix	High	Medium-High	20-60, 000
					Unit Total	214, 000
BC Essential Information	Dx	Robbie Bowers	John Racher	Medium	Medium-High	140, 000
Materials Standardization	Dx	Daniele Chan	David Langstaff	High	High	200, 000
BC Micro Biology	Dx	Barb McLeod	John Racher	High	High	120, 000
Reduce Variability in Front End Materials Cost Per Patient	Dx	Mario Balassone	David Langstaff	TBD	High	300, 000
Incorrect Data on Requisitions	Dx	Lynne Fowler	David Langstaff	High	High	135, 000
Incorrect Data on Requisitions	Dx	David Langstaff	David Langstaff	TBD	TBD	TBD
Morphology Productivity	Dx	Colette Bechard	David Langstaff	Medium	Medium-High	200, 000
Hematology Morphology	Dx	Rob Poulin	David Langstaff	Medium	Medium-High	200, 000
Needlestick Reduction	Dx	Elisa Mirabelli	David Langstaff	High	Medium-High	25, 000
Front End Data Entry Errors	Dx	Joan Cresswell	David Langstaff	High	Medium-High	100, 000
Mobile Specimen Handling	Dx	Norma Neale	David Langstaff	TBD	High	289, 000
Improve Analytic TAT for STAT Test Performed at FMC Chemistry	Dx	Leslie Laurie	Leslie Laurie	TBD	High	150, 000
PSC Productivity and Patient Wait Time	Dx	Mary Gorko	Leslie Laurie	Medium	Medium-High	72, 000
SSC Sample Integrity Defects	Dx	Leah Nichols	Leslie Laurie	Medium	Medium-High	50, 000
					Unit Total	1, 981, 000
Late Stage Talent Sourcing	HR	Zahra Bhojani	Kerri Smiley	Medium	Medium-High	252, 000
Transaction Flow from BU to Pay	HR	Trish Currie	Sherry Smith	TBD	TBD	TBD
					Unit Total	252, 000
Help Desk Optimization	IT	Ash Rajendra	Tom Gemon	TBD	TBD	TBD
					Unit Total	TBD
Rationalization of Change Control	Nordion	Mike Krzaniak	Jill Chitra	Medium	Medium	90, 000
Optimizing Capsule & Adjuster Mfg.	Nordion	Scott Taylor	Corby Nicholson	Medium	Medium	65-130, 000
Sales Order Fulfillment	Nordion	Meri-Jo Thompson	Scott McIntosh	Medium	Medium-High	165, 000
Optimizing Stores Systems at Theratronics	Nordion	Scott Taylor	Corby Nicholson	Low	Medium	50-100, 000
					Unit Total	427, 500

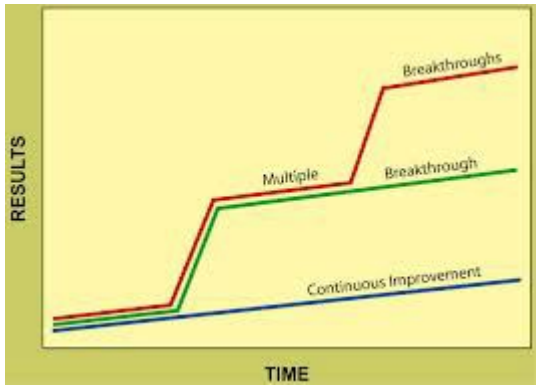
Operational Excellence ’07 Planning and Budgeting

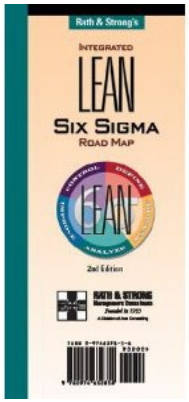


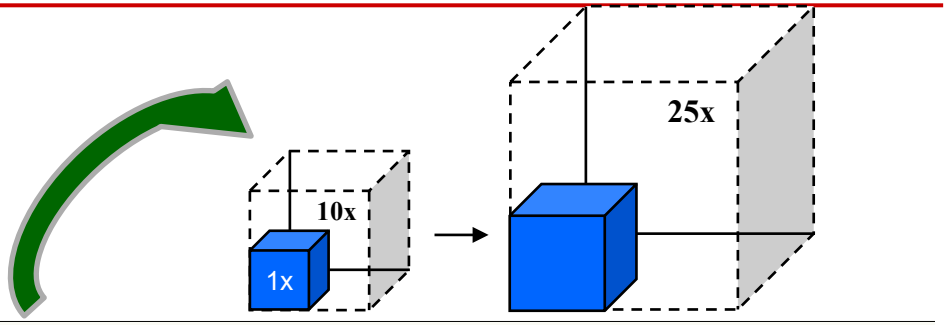
Mid-Year Assessments (self-assessments from Deployment Leaders)

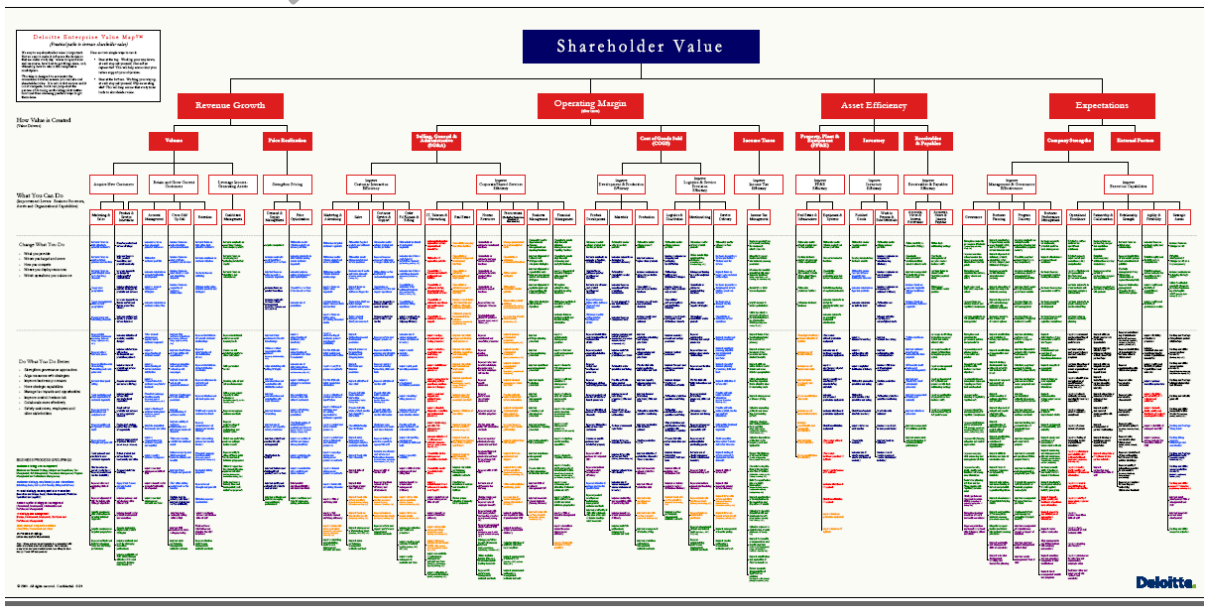
	Diag.	Sciex	Pharma	Nordion	IT	Finance	HR	SCM/ REF
1: Overall Deployment Progress & Performance?								
2: Picking the right belts								
3: Picking the right projects								
4: Training								
5: Coaching								
6: Belt Productivity								
7: Success, impact to date								
8: Program ROI (benefit to burden)								

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)







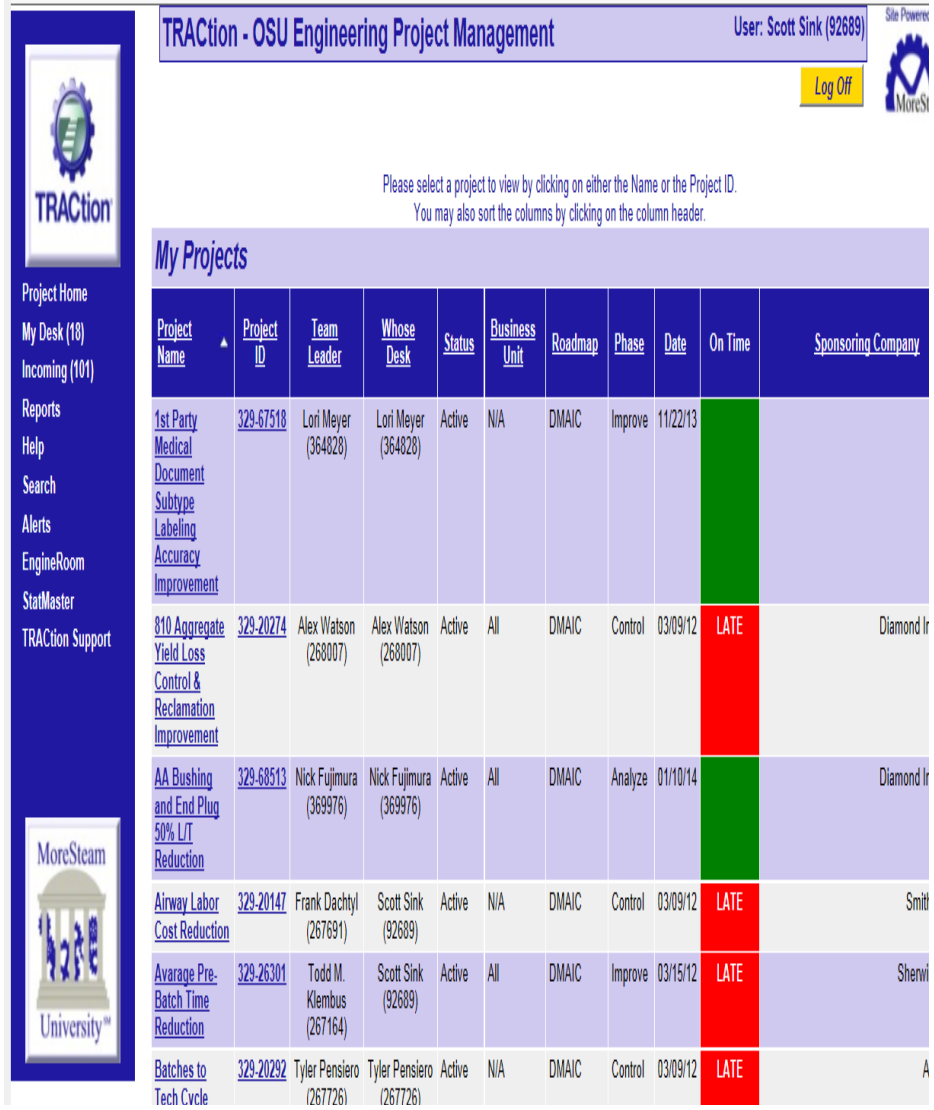


ISE
Integrated Systems Engineering

Deloitte.

Enterprise Value Map
Practical paths to increase shareholder value

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



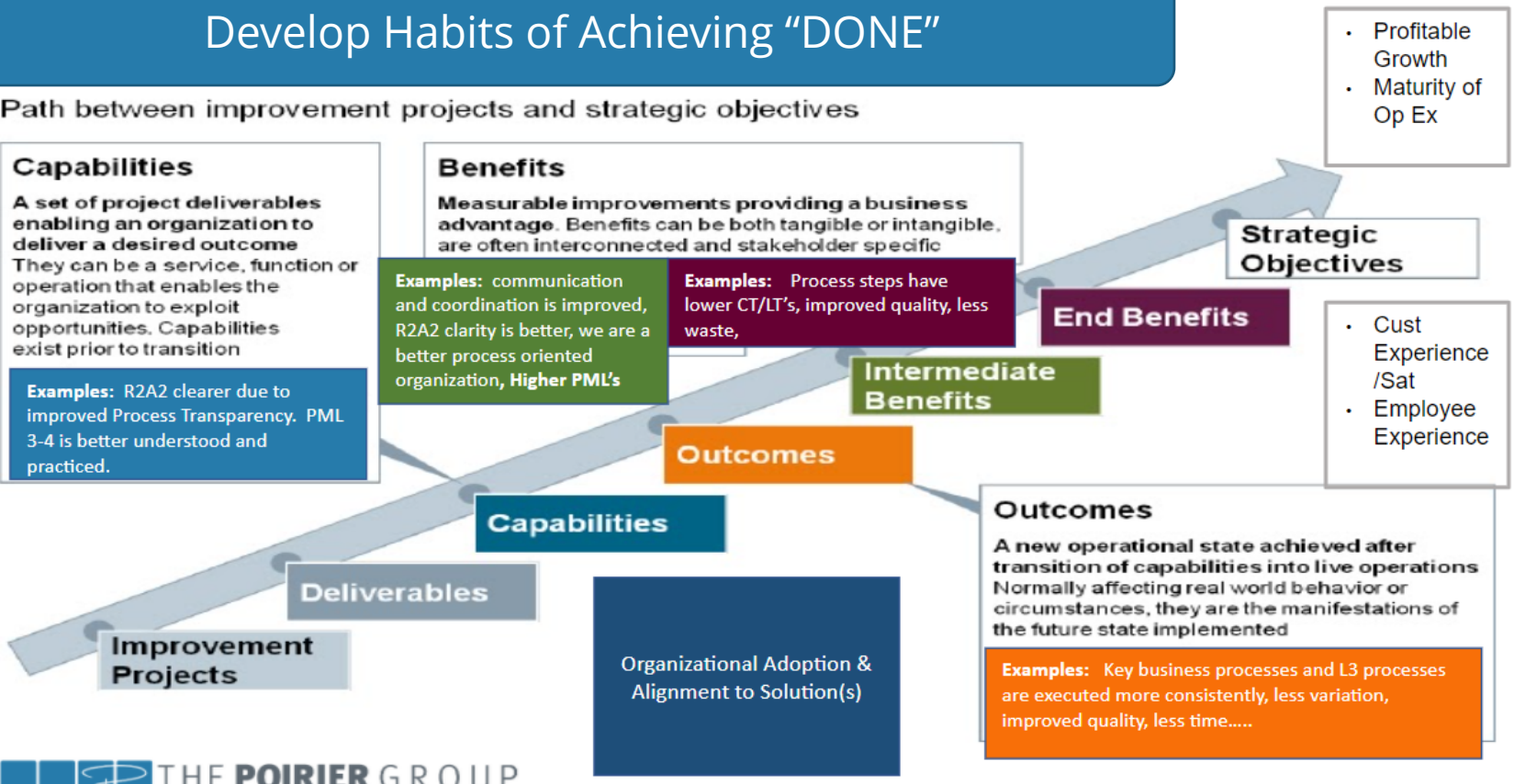
- A program/Project Management app is valuable. We chose Instantis Enterprise Track at MDS, I used Moresteam's TRACtion at OSU.
- There are many off the shelf options today…
- We utilize the IMP (Integrated Master Plan) and OKR (see Doerr) and agile/sprint retrospective methods for accountability and 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"

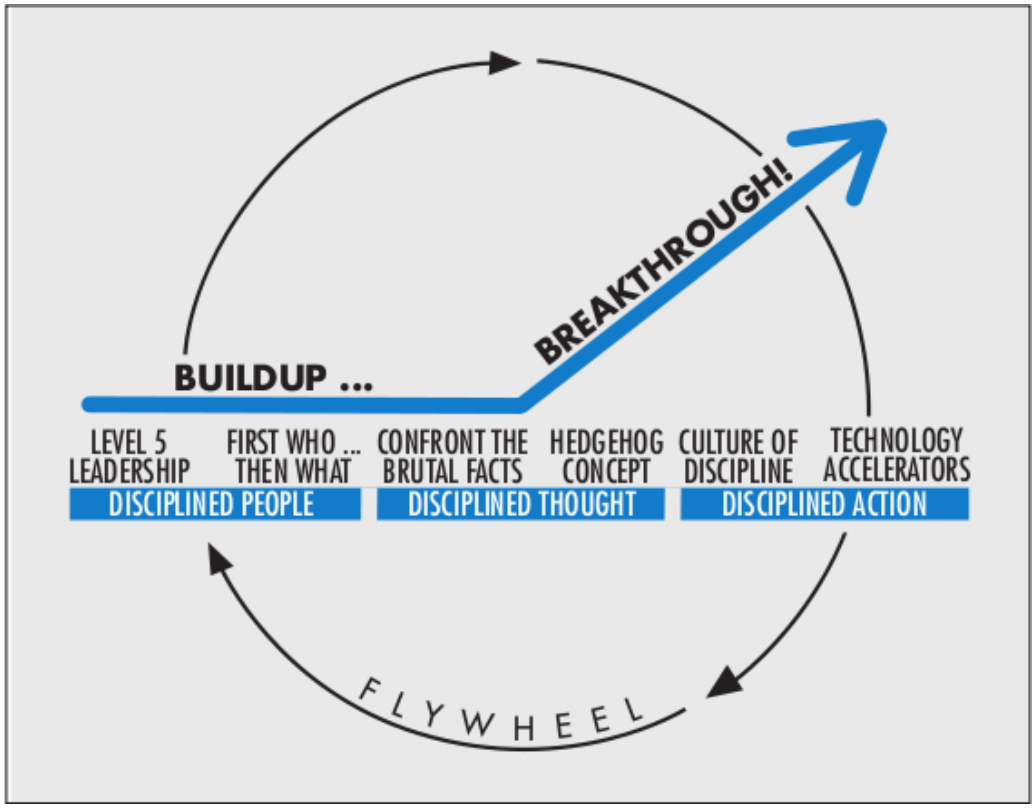
Path between improvement projects and strategic objectives



How to Celebrate, Time out for Acknowledgement, Retrospectives, Offset Entropy

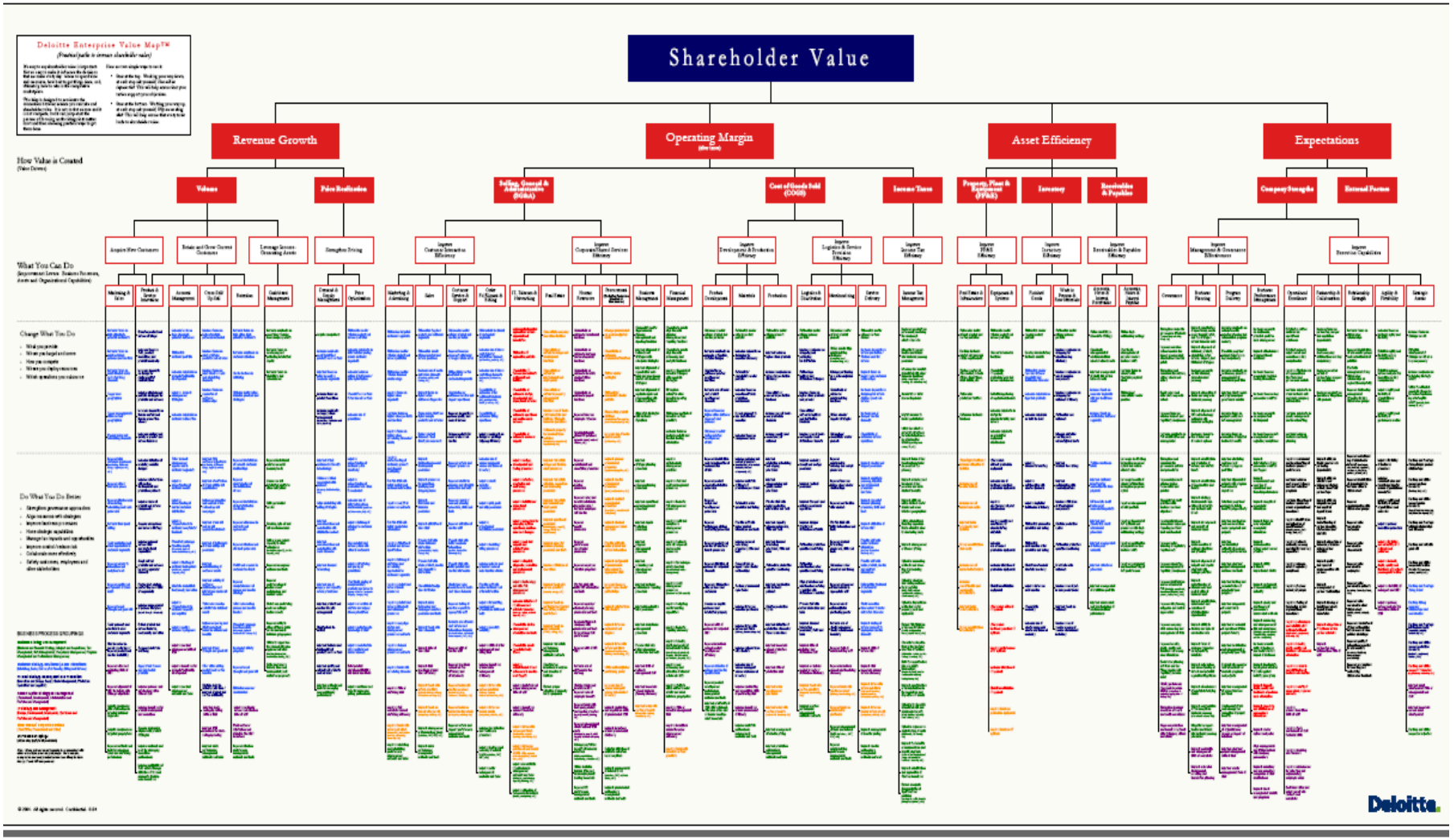
- Import the right kind and amount of 'energy' at the right moments…
- We do periodic huddles, have integrated the tiered huddle process into our engagements
- We extensively use visibility boards, Miro, as example for PDSA
- We held 'rodeo's' (showcases, annual or semi-annual company conferences) that 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

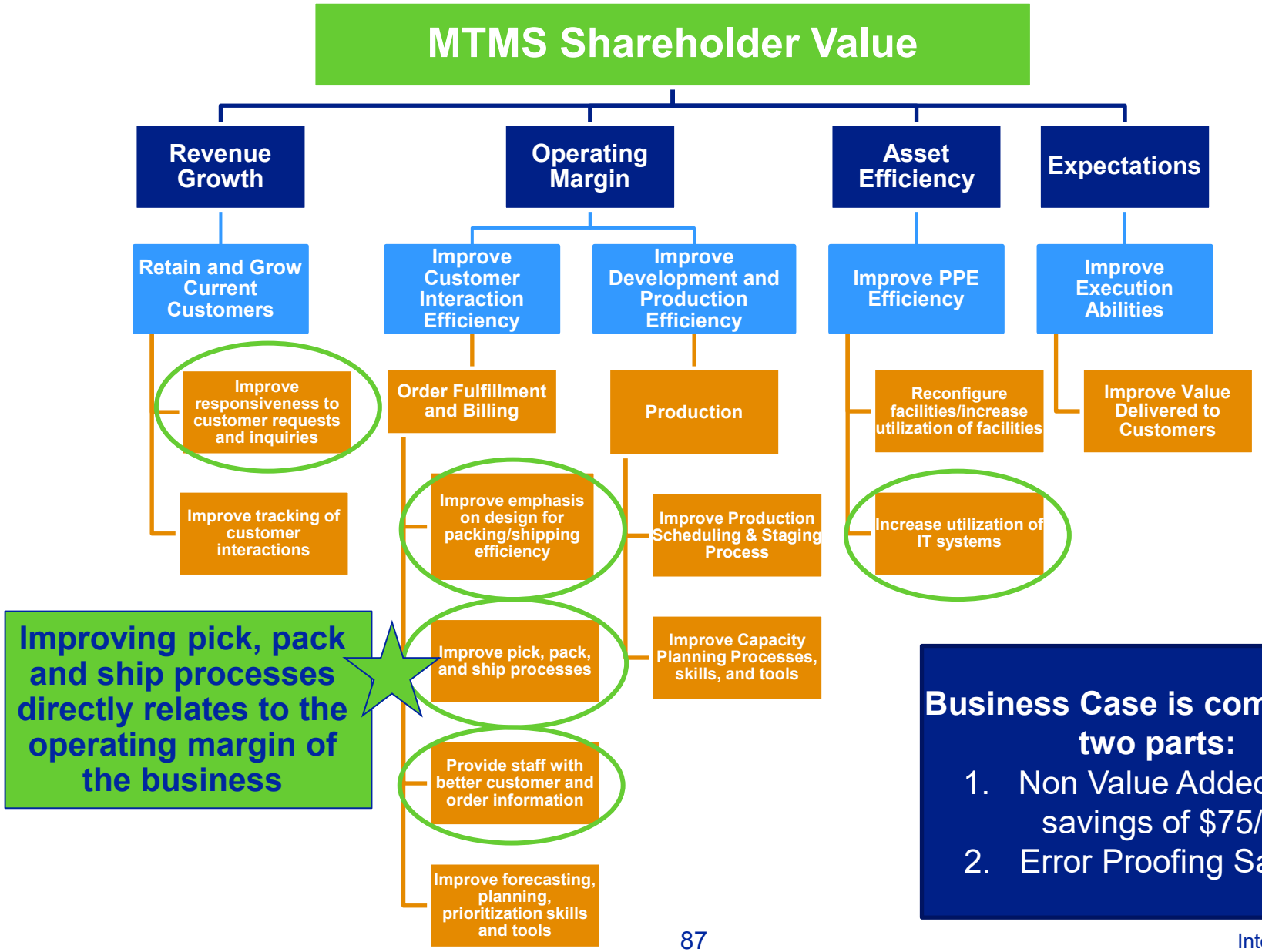


- This framework is an integral component of our Transformation approach and strategy.
- Note 'technology accelerators' as highlighting the importance of Technology Enablement and integration along with People, Strategy and Process.

They have to translate this to their project and it looks like next slide, as example



Business Case – Why this project?



Business Case is comprise of two parts:

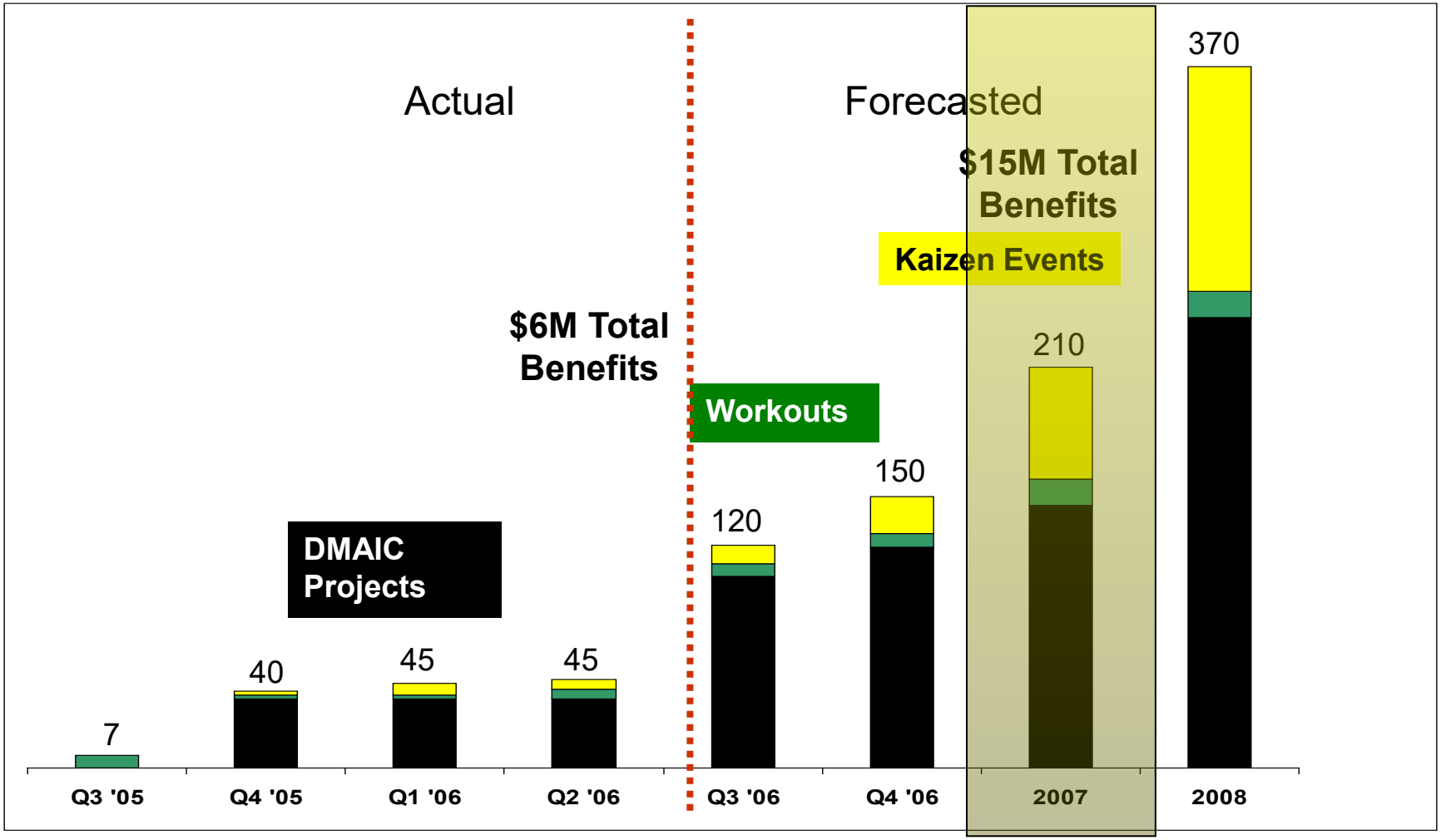
1. Non Value Added Time savings of $75/hour
2. Error Proofing Savings

Internal usage only

Forecasting Pharma Services LeanSigma Benefits

Value Stream	Current 2007 Project Run Rate (25 projects)	1% of Revenue ($6M)	Variance	1.5% of Rev ($9M)	2% of Revenue ($12M)	# 2006 addition al belts	# add'l 2007 belts
DSA		$660	$660	$990	$1,320		
Pharma		$660	$660	$990	$1,320		
ECR	$492	$1,380	$888	$2,070	$2,760		
BAS	$233	$960	$727	$1,440	$1,920		
GCL	$525	$960	$435	$1,440	$1,920		
GCD	$190	$1,380	$1,190	$2,070	$2,760		
Total	$1,440	$6,000	$4,560	$9,000	$12,000	23	40

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

MDS
Science advancing health

	2005-06	2007	2008	2009	2010	2011	2012
Hard/Total Benefits	$6M/ $10M	$10M/ $16M	$20M/ $30M	$30M/ 45M			
Gross Revenue	$1B	$1B					
Benefit/ Revenue	.6%	1.6%	2%	2.2%			
Investment	~$3M	~$6M	~$7M	~$7M			
Benefit/ Investment	<1:1 (2:1)	2:1 (3:1)	3:1	6:1	6:1	6:1	6:1
Belts: M/SBB	3 (1:4 BB)	4 (1:8) BB	5 (1:7) BB	6 (1:10) BB	1:10	1:10	1:10
FT Belts	12 (.2%)	24 (.4%)	40 (1%)	60 (1%)	1%	1%	1%
PT Belts	51 (.9%)	130 (2.5%)	220 (4%)	300 (6%)	350 (7%)	500 (10%)	10%

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_Yw2KaV4iSUqTgcRelcxanw

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/

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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

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

Jared is a Master Black Belt and a Senior Leader at the Poirier Group

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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:

INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS

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:

https://www.thepoiriergroup.com/creating-resilient-organizational-excellence-programs-amid-major-disruptions/

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

Who is The Poirier Group?

888 views • 3 years ago

The Poirier Group (TPG) is a Toronto-based boutique management consulting firm focused on strategy execution, with specialty in process improvement, cost optimization and operational efficiency. We partner with clients across diverse industries who are motivated to transform their business, with an ambition to become the best version of themselves. Then, we work with the team from executives to the shop floor to achiev...
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BPI Part II: Picking the Right Projects

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Scott Sink
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- Other CISE Member Companies Involved: Boeing, Duke Healthcare, Meta, Consumers Energy, GM, Disney, Deere, and more….

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Unique Format for networking, learning, sharing, developing

Get a critical 'patch/updates' on how ISE's are innovating to better integrate People, Strategy, Process, Information and Technology

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

Hot topics of critical importance to leaders, managers, young professionals engaged in operational excellence work

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.

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

New Orleans, IISE Annual Conference, CISE's Performance Excellence Track—See you there!!

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

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 IISE conference in 1973 was in New Orleans, I got hooked and most of my most valued personal and professional relationships have come from IISE conferences;**
10. **Get Altitude on things, take time to 'recharge', reflect, reinvent….**
11. **Have a Hurricane!!**

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/

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

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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/