Building Performance Management Systems: Sharing Lessons Learned

A Special 2-part Series to launch the 2022 IISE Global Performance Excellence Webinar Season

- Part I: The Theory, Principles, Frameworks (11 Jan)
- Part II: Zoom in on Component Build out

Presenter

D. Scott Sink,
Adjunct Prof, Va Tech
Global Perf Excellence Webinars
Team Lead, IIESE

18 January 2022
PURPOSE:

To share learnings from recent Performance Management System/Operational Excellence Development initiatives

11:30 Quick Recap of Part I—Foundational Components for Operational Excellence Systems

Drill down on key components:
- Planning
- Integrated LeanSigma
- Measurement
- Employee Engagement

12:25 Close out and Adjourn—what’s ahead, Survey, Op Analytics Certification Program
A new Professional Development Group to join

Integrated Systems Engineering
Technical Interest Group sponsored by Institute of Industrial and Systems Engineers (IISE) *NEW*

Join our LinkedIn group "Integrated Systems Engineering“ at https://www.linkedin.com/groups/12587064.

Become a member of IISE at https://www.iise.org/Details/?id=560 to collaborate with colleagues, receive training, and to learn about our upcoming Annual Conference at https://www.iise.org/Annual/.

Our objective is to collaborate and lead conversations about how traditional Industrial Engineering and Systems are integrated across IISE, partner societies, academia and industry.
You can access previous webinars...

You can access all the Performance Excellence Webinars on the IISE Website


Last Week's Part I can be found with this link:

We’ve assimilated and integrated learnings from Op Ex and Integrated LeanSigma work—here’s a sampling of our engagements & case study base.
And ongoing benchmarking with our CISE Group

CISE is a group of Sr. Leaders who lead the ‘ISE’ function in their respective organizations. We are an ‘affinity group’ of thought leaders.
We want to help you avoid the Muddle in the Middle that most organizations live through....
Our approach to help you better understand this.

Integration, Synthesizing, Orchestration
What is a ‘System’?

A **system** is a group of interacting or interrelated elements that act according to a set of rules to form a unified whole. A system, surrounded and influenced by its environment, is described by its boundaries, structure and purpose and expressed in its functioning. Systems are the subjects of study of systems theory and other systems sciences.
The ‘nature’ of organizational systems is evolving.....

Much of this evolution is ‘driven’ by the ‘10 Laws of Technology’ (hyperconnectivity) that are altering how we work and relate and how value is created...
20’s style Operational Excellence Programs are a product of well over 100 years of ‘design and development’

A BRIEF -HOWEVER COMPLEX- HISTORY OF LEAN
Several branches & trends influence its evolution

Evolution began with the founding of Industrial Engineering circa turn of 20th Century

Branches evolved in Lean and TQM then into Integrated LeanSigma and now into Integrated Systems Engineering:

Enterprise Wide Operational Excellence Programs
Many Organizational Leaders have ‘Platforms’ and ‘Planks’ in their Strategy Platforms (Fronts)

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

In order to succeed with Operational Excellence (System Wide Performance Mgmt. Sys’s) Leadership will need to embrace, learn how to be systems thinkers.

Some Leaders/Managers do this naturally, many don’t. That’s the reality Change Agents live with.

In the absence of Leadership being aligned and attuned to Systems Thinking, that way of approaching Enterprise-wide Operational Excellence sustainable in impactful positive change is unlikely.
One core principle and requirement is ‘Learning’ Capability

Coupled with Systems Thinking come the other four components that reflect the disciplines of a Learning Organization.

Many of the Components of an Enterprise Performance Management System build from these Learning Organization Components.

Let’s look at a 20’s view of an Operational Management System.
Quality has been the focus of much Performance Improvement thought and effort

Here is an example of the Integrated Quality Management System

Think about this beyond just Quality:

Effectiveness
Efficiency
Productivity
Quality of Work Life
Innovation/Learning
Profitability
Sustainability
And Don’t lose sight of the ‘end game’

**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

---

And Don’t lose sight of the ‘end game’
PURPOSE:
To share learnings from recent Performance Management System Development initiatives

11:30 Quick Recap of Part I—Foundational Components for Operational Excellence Systems

**Drill down on key components:**
- Planning
- Integrated LeanSigma
- Measurement
- Employee Engagement

12:25 Close out and Adjourn—what’s ahead, Survey, Op Analytics Certification Program
The TPG Framework: product of 30 years of design and development and application—Strategic Performance Improvement Planning is a Critical Component for Op Ex Programs…
The Planning Component.... (Effectiveness)

Component 1—Planning (Effectiveness)

Hoshin Kanri
Yoji Akao, the 50’s


Next week we’ll zoom in on this
Lean Sigma Foundations

This ‘house’ framework essentially is a representation of the frontal work that has to be done to build a PMS.

The Strategy and Approach

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

Current State

Planning

Learning

Measurement

‘Technology’

Communication

Motivation

Political/Positioning

Infrastructure (Leadership Engagement)

Point of Arrival

Best-in-class Operational Excellence Program with Sustainable and Significant Impact:
- x% (of Revenue) in Annual Benefits
- Critical mass of seasoned and skilled Change Agents
- Way of doing business
- ‘Good kind of tired’

Future State
We’ll link you to previous webinars that support our key points today…

We have a number of webinars in our library that focus on the Planning and Development of Op Excellence Programs.

The first on the list is last weeks webinar, the fourth on the list is what I want to point you all to for methodology on how to create strategies and plans.

IIESE PERFORMANCE EXCELLENCE WEBINARS

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.

- 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 IIESE Perspective
- Creating Cultures that Support Full Potential Performance/Operational Excellence
- IIESE Performance Excellence Event of 2020: Sneak Preview

[ Back to top ]
The Equation for Success (Possibilities and Drivers)

\[ Y \text{ (sustainable, best-in-class business results)} = f \left( X \text{ (key driver variables)} \right) \]

- 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

\begin{itemize}
  \item X1: Leadership & Management Alignment and Commitment
  \item X2: Pick the right People (Who before What)
  \item X3: Best-in-class training and development
  \item X4: Pick the right projects
  \item X5: Skillful, disciplined, sustainable execution of Integrated LeanSigma Methodology;
  \item X6: Celebrate successes and use them as a catalyst for even more success
  \item X7-n......(e.g. infrastructure, communication front, etc.)
\end{itemize}
Key Success Factors—Early out

**KSF #1:** A Leader, CEO, MDS and David Poirier, President of MDS Enterprise Services at the time, who positioned ISE and BPI as a key component in the MDS Transformation.

**KSF #2:** The CEO was replaced by a young leader who had seen the benefits from an Op Ex Program driven with Integrated LeanSigma in another Life Sciences organization so sustained support was an important factor. Continuity of Leadership, Strategy, Vision…

**KSF #3:** Alignment between the CEO, President, and I around the Vision (intended Future State—3 years out), the current state and the migration strategy and plan.
Key Success Factors—Early out

**KSF #4:** Employing BMGi to help us get the design right. They saved us a year probably by ensuring we got first things first.
  - eHandbook
  - Roles and Accountabilities
  - Deployment launch learnings
  - White Belt Design and execution assistance early out
  - Picking right projects advice

**KSF #5:** Deciding to purchase an Enterprise Program Management System (Enterprise Track at the time)
  - Tactical investment that paid off strategic dividends for us as we evolved

**KSF #6:** The development of an Enterprise Design, Development, Deployment Team (DDT).
  - Senior Leaders/Manager from each of 12 units, my counterpart in the units—Deployment Leaders
Key Success Factors—Early out

**KSF #7:** The Infrastructure strategy being thought through and endorsed by the top 12 leaders to include the development of Value Stream Owners. I had a sense that VSO’s would be a critical role for success and discovered later just how important that was.

**KSF #8:** The early and rapid execution of White Belt Training Sessions for the top teams (12 teams roughly top 20 from each team = top 240) of every unit in MDS followed closely thereafter by another Strategy Session with the CEO and his top team. Then very closely after that another round of WB sessions in every unit resulting in a rapid blitz of socializing and alignment of Principles, Strategies, Plans. Within 6 months we had totally positioned the entire organization for what was to follow.
Key Success Factors—First & Second Year

**KSF #9:** Allowing Project Selection to emerge naturally in the first year for the process improvement specialists in training. Often was voice of employee driving—eliminate paint points.

- Taking a very broad view of ‘improvement’ to include DfLSS, DMAIC, Kaizen’s, A3, Continuous Improvement (e.g. quick wins, PDSA, etc.)
- Not forcing strategy and policy deployment, top down, too early, allowing this to be bottom up. The CEO referred to is as Controlled or Organized revolution from bottom up.
  - “Our strategy in year 1 was to bubble up the talent and the projects, leave a lot of local control and direction, get people using the tools, pick projects that people are ‘jazzed’ about”
  - “I suspect that our portfolio is focused on process pain points right now and light in areas that actually touch the customer and we have to focus on beefing up this dimension of the portfolio”

**KSF #10:** Picking the right candidates and optimizing the training.

- Picking the right people was a serious decision, not taken lightly. Like a company would pick someone for an Executive MBA.
- We started with a traditional ‘death by powerpoint’, standard belt training program but decisively and rapidly killed that in favor of a Blended Training Program with MoreSteam. One of our best decisions!!
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

**Control Documents**

**EnterpriseTrack:**
*Program and Project Tracking*

**Lean Sigma Policies & Guidance**

**Source External Lean Sigma Expertise (BMG and MoreSteam)**

**Curriculum Foundation**
Leadership Alignment & Support Infrastructure was a Critical Early Factor

1) Pick the right belts and 2) surround them with the support requirements they need to be successful.
Most organizations are engaging employees at all levels in Process/Performance Improvement activities on top of their ‘day jobs’—Perhaps the most significant transformation component is as simple as Time Management.

**FROM**

Suboptimal Time Mgmt

- **A** = Administer (DO) our day jobs, accomplish our accountabilities
- **C** = Cater to Crises, Fight Fires, do the unexpected
- **D** = Do the Dumb, waste time, non-value add time and effort (right things, wrong way; wrong things, right way; wrong things, wrong way)
- **E** = Enjoy Life
- **B** = Build the Business (improve what we do and how we do things)

**TO**

Optimal Time Mgmt

The Default Position for Most Organizations looks something like this (in general)—too much NVA, too many crises to cater too, not enough quality A time, and not enough quality B

Employee Engagement in Huddles and Continuous Improvement and other “B” type of initiatives can cause this shift in how we spend our time.
Need to create these things with your planning ‘process’/method..

• Shared Vision
• Agreed to Values and Operating Principles
• Objectives and Associated Key Results (OKR’s) for 1 and 2-3 year horizons (Enterprise, Tier 1 level)
  • Operational definition of DONE/SUCCESS at end of a PDSA period
• Current State/Reality
  • What’s working?
  • What needs work?
  • Performance Gaps
• Prioritization (Nominal Group or Delphi Technique) of Performance Improvement Objectives

• Migration Plan, Integrated Master Plan

• Program and Project Management
  • Agile, Sprint type mentality (bias for results, benefits realization)
  • Establishment of Disciplined Quarterly Reviews
  • Establishment of Tiered Huddle System
  • Establishment of Visible Measurement Systems, Huddle Boards

• Annual Updating and Enhancements to Plan, formal recycles to ensure alignment and integration of new team members
For OKR2, Process Maturity Level Improvement Initiative:

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/LT’s, improved quality, less waste,

**Intermediate Benefits**
Examples: Key business processes and L3 processes are executed more consistently, less variation, improved quality, less time....

**Outcomes**
Organizational Adoption & Alignment to Solution(s)

**End Benefits**
Examples: Key business processes and L3 processes are executed more consistently, less variation, improved quality, less time....

**Strategic Objectives**
- Profitable Growth
- Maturity of Op Ex
- Cust Experience/Sat
- Employee Experience
The Strategy and Method you use must yield these outcomes...

**Communication**
Creating a shared understanding and the necessary conditions for alignment

**Alignment**
Driving the synergy required to rapidly translate strategy into reality

**Visibility**
Creating a clear link between plans, actions and results that drives accountability

**Accountability**
Taking responsibility for the results I produce

**Discipline**
Having the perseverance to always follow through

65% of organizations have an agreed upon strategy
14% of employees understand their organizations strategy
<10% of organizations successfully execute
Purpose and Agenda

PURPOSE:

To share learnings from recent Performance Management System Development initiatives

11:30 Quick Recap of Part I—Foundational Components for Operational Excellence Systems

**Drill down on key components:**
- Planning
- Integrated LeanSigma
- Measurement
- Employee Engagement

12:25 Close out and Adjourn—what’s ahead, Survey, Op Analytics Certification Program
Creating a Business Process Improvement Competency, critical mass of Change Agents that can train, coach, catalyze, deploy proactive and aggressive focus on improving what is done and how things are done....
You can see the ‘system’ and ‘components’ in this view of Operational Excellence...
Another illustration we reviewed in a Webinar last year.


Sustainable Operations Excellence—The integration of CI, Op Ex, DMAIC and DfLSS
The Measurement Component.... (How do we know?)

Component 3—Measurement (How do we know?)

The common approach... flawed in my view

Balanced Scorecard
Late 90’s

This approach often ends with a ton of KPI’s and nobody knows what to do with them....
The Management Systems Model—who Manages, what’s managed, how we manage

Leadership & management team
(wisdom application, data/facts to information conversion process)

Data management and Operational Analytics

Upstream Systems and Inputs: Suppliers & customer orders

Decisions

Actions

Information perception/understanding/insights

Data capture

Downstream Systems and Outputs: Orders Fulfilled

Data entry

Data Organization

The Business Processes/Value Streams
Two Fundamental Roles involved in “Analytics” work to Support Enterprise Performance Optimization

• Most ISE/ILSS Process Improvement Projects require that the ISE/Belt do both roles, certification requires that
• Data is almost never stored in a common place and are not trusted nor available

• the current state process in many large organizations splits data and analytics
• Data are stored in a common place, and are trusted and available

The Basic Roadmap for the OA Triangle

• “Above the line” analyst role
  1. What are the fundamental Questions that have to be answered?
  2. What data elements do those questions require?
  3. Organize the data and facts and then export to your analytics app.
  4. Extract features from data through integration and manipulation of data that move us closer to answers. (torture the data)
  5. Apply business acumen to data & analyses – create new knowledge
  6. Apply data visualization techniques to aid in telling the right story – as in life, so in business: the best story wins …

• Foundational data role
  1. What do we need to know in order to achieve the performance objectives—what are the questions we have to answer?
  2. Architect/Create the Measurement and Analytics Plan (Data Model included)
  3. Select and gather data from many sources, preferably through automated extract, transfer, & load (ET&L) process
  4. Create (observation, interviews, etc.) any data elements that don’t exist (ISE Measurement)
  5. Assure data are cleaned & ready for analysts or you to use – data quality monitors
  6. Assure data are integrated & can be joined with other data – think LEGO’s
  7. Assure data storage is high reliability & user-friendly – SSAS cubes, databases
  8. Integration and organization of foundational data elements as well as derivative data and other key metrics of interest
The Management Systems Model and the Analytics Triangle integrate... (messy but what is really happening)

Leadership & management team
(wisdom application, data/facts to information conversion process)

Upstream Systems and Inputs: Suppliers & customer orders

Downstream Systems and Outputs: Orders Fulfilled

The Business Processes/Value Streams

Data capture

Data management and Operational Analytics

Data Organization

Data entry

Data capture

Information portrayal

Information perception/understanding / insights

Visualization

Knowledge Extraction

Feature Extraction

Cleaning

Integration

Selection

The Question?

Decisions

Actions

Data capture

Data capture

Data capture

Data capture
Operational Analytics, done right, minimizes latencies and enhances ability to drive more rapid benefits realization

Reduce the cycle times on each step in this explicit and systematic process.

Executing the Analytics Triangle effectively enables more rapid decisions and actions and positions for more rapid benefits realization.
We’re all familiar with Work Breakdown Structures

1. Design
   1.1 Permits
   1.2 Drawings
2. Procurement
   2.1 Electrical
   2.2 Plumbing
   2.3 HVAC
3. Construction
   3.1 Interior
   3.2 Exterior
4. Inspections
   4.1 Masonry Work
   4.2 Building Finishes
5. Turnover
   5.1 Walk Thru
   5.2 Closing

Perplexities, large-scale systems

Process
Project
Program

Business Process/Value Stream

Extended Enterprise Value Streams

To build effective performance measurement systems requires Process Breakdown Structures
We like to do ‘paper and pencil’ (ppt)

• Since this is currently being done ‘virtually’ versus a traditional whiteboarding with post-its exercise...

  • We've migrated to either using Miro, which works very well, to do digital process mapping or just interviewing, talking the process, recording, then creating versions of maps in ppt and then doing reviews to get to a final version (for current or future state).

  • We then usually migrate to Visio and use layering which works very well.
BBBST 1:1 Community Based Program

**MENTEE**
- Apply, Nominate, referred from Schools, mentees, BB’s/BB’s, Churches, etc.
- Young People with 3-5 Adv Childhood Exp. (ACE’s)

**MENTOR**
- Refer, Nominate, Apply, Volunteer
- Mentors Willing to Serve

**Training**
- Profile Created
- Enrollment and Assessment
- Asset (40) Assessment
- Capability Assessment

**Matching Process**
- “Ready” Mentee
- “Ready” Mentor

**OKR 1**
- MEE / MOR Wait Time: Time From Application to Match Introduction

**OKR 2**
- Active Cases: Total # of Matches in System

**Enrollment & Assessment Team**

**Match and Case Support Team**

**Match & Introduction Process**

1. Enrollment & Assessment
2. Profile Created
3. Matching Process
4. Introduction

**Match Closure Process**
Layering in Visio is a great functionality.

Volunteer Journey

Creating a New Layer

Go to the Layer Properties... dialog box in the Layers dropdown menu from the Editing section of the Home tab and click New... Type a name for the new layer.

Assigning Shapes to a Layer
The First Six Months was Benchmarking, Partnering, Socializing with the Senior Team, Readying to do White Belt Training to the top 250 leaders.
IISE’s Operational Analytics Certificate and Certification Program

In Partnership with:
The Poirier Group
Moresteam University
Kaajenga

Delivered Uniquely:
IISE TV– Operational Analytics Channel
- 10 Video Modules with ‘youtube’ sized segments for easy consumption/learning
- Certificate requires an on-line final exam
- Certification requires the Certificate plus a reduction to practice, proof of skill project

- Module 1: OA Thought Leader Perspectives
- Module 2: Operational Analytics Perspectives, Points of View and Foundational Principles and Methods and Models
- Module 3: Operational Analytics: The Foundational Data Management Role
- Module 4: Operational Analytics: The Analyst, Decision/Action Support Role
- Module 5: Data Sciences and The New Industrial and Systems Engineering
- Module 6: Operational Analytics: The Evaluation Role
- Module 8: Operational Analytics: Putting it All Together: Case Studies
- Module 9: The Role of Data and Information (Engineered Management Systems) in Periods of Major Disruption, Reducing the Latencies
- Module 10: Creating Cultures that Support Full Potential Performance/Operational Excellence
Average lbs/day when running 2 lines 2 shifts = 4,976 lbs. (based on data since April 2011)

- **Z-Conveyor:** 217 lbs/day ≈ $290
- **Freezer 2 Entrance Conveyor:** 189 lbs/day ≈ $160
- **Fryer 2:** 237 lbs/day ≈ $145
- **Batter App 2:** 302 lbs/day ≈ $110
- **Fryer 3:** 202 lbs/day ≈ $110
- **Freezer 3 Entrance Conveyor:** 59 lbs/day ≈ $65
- **Batter App 3:** 340 lbs/day ≈ $65
- **Drum Breader/Shaker Table 2:** 1056 lbs/day ≈ $265
- **Drum Breader/Shaker Table 3:** 1054 lbs/day ≈ $265
- **Carruthers-Screw Auger:** 168 lbs/day ≈ $125
- **Z-Conveyor:** 217 lbs/day ≈ $290
- **Inside Freezer 2 & 3:** 170 lbs/day ≈ $70
- **Inside Freezer 2 & 3:** 170 lbs/day ≈ $70
- **Bagger-Palletizing:** 478 lbs/day ≈ $635
- **Yearly cost = $601,170** (Est. for running 2 lines 2 shifts for 235 days/yr and bagger running 315 days/yr)

**Drum Breader/Shaker Table 2:** 1056 lbs/day ≈ $265

**Carruthers-Screw Auger:** 168 lbs/day ≈ $125

**Bagger-Palletizing:** 478 lbs/day ≈ $635

**Inside Freezer 2 & 3:** 170 lbs/day ≈ $70

**Yearly cost = $601,170** (Est. for running 2 lines 2 shifts for 235 days/yr and bagger running 315 days/yr)
This problem is nothing new and has actually been the focus of prior improvement projects. We will take a look at 2 projects that have sought to reduce the process variability and in turn, reduce waste.
Traditional BSC Table/Reports of data doesn’t enable statistical thinking and is not focused on x’s it tends to focus on Y’s.

### FY 2009 Hospital System-Level Measures

<table>
<thead>
<tr>
<th>Goal</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall Satisfaction Rating: Percent Who Would Recommend (Includes inpatient, outpatient, ED, and Home Health)</td>
<td>60%</td>
<td>80%</td>
<td>37.98%</td>
<td>48.98%</td>
<td>57.19%</td>
<td>56.25%</td>
</tr>
<tr>
<td>2. Wait for 3rd Next Available Appointment: Percent of Areas with appointment available in less than or equal to 7 business days (n=43)</td>
<td>65%</td>
<td>100%</td>
<td>53.5%</td>
<td>51.2%</td>
<td>64.0%</td>
<td>61.20%</td>
</tr>
</tbody>
</table>

**Patient Safety**

<table>
<thead>
<tr>
<th>Measure</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Safety Events per 10,000 Adjusted Patient Days</td>
<td>↓ 0.28</td>
<td>0.20</td>
<td>0.35</td>
<td>0.31</td>
<td>0.21</td>
<td>0.20</td>
</tr>
<tr>
<td>4. Percent Mortality</td>
<td>↓ 3.50</td>
<td>3.00</td>
<td>4.00</td>
<td>4.00</td>
<td>3.48</td>
<td>3.96</td>
</tr>
<tr>
<td>5. Total Infections per 1000 Patient Days</td>
<td>2</td>
<td>3.37</td>
<td>4.33</td>
<td>4.09</td>
<td>2.56</td>
<td>1.95</td>
</tr>
</tbody>
</table>

**Clinical**

<table>
<thead>
<tr>
<th>Measure</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Percent Unplanned Readmissions</td>
<td>↓ 3.5%</td>
<td>1.5%</td>
<td>6.1%</td>
<td>4.8%</td>
<td>4.0%</td>
<td>4.1%</td>
</tr>
<tr>
<td>7. Percent of Eligible Patients Receiving Perfect Care—Evidence Based Care (Inpatient and ED)</td>
<td>95%</td>
<td>100%</td>
<td>46%</td>
<td>74.1%</td>
<td>90.0%</td>
<td>91.7%</td>
</tr>
</tbody>
</table>

**Employee Perspective**

<table>
<thead>
<tr>
<th>Measure</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Percent Voluntary Employee Turnover</td>
<td>↓ 5.80%</td>
<td>5.20%</td>
<td>5.20%</td>
<td>6.38%</td>
<td>6.10%</td>
<td>6.30%</td>
</tr>
<tr>
<td>9. Employee Satisfaction: Average Rating Using 1-5 Scale (5 Best Possible)</td>
<td>4.00</td>
<td>4.25</td>
<td>3.90</td>
<td>3.80</td>
<td>3.96</td>
<td>3.95</td>
</tr>
</tbody>
</table>

**Operational Performance**

<table>
<thead>
<tr>
<th>Measure</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Percent Occupancy</td>
<td>88.0%</td>
<td>90.0%</td>
<td>81.3%</td>
<td>84.0%</td>
<td>81.3%</td>
<td>86.6%</td>
</tr>
<tr>
<td>11. Average Length of Stay</td>
<td>↓ 4.30</td>
<td>3.80</td>
<td>5.20</td>
<td>4.90</td>
<td>4.00</td>
<td>4.70</td>
</tr>
<tr>
<td>12. Physician Satisfaction: Average Rating Using 1-5 Scale (5 Best Possible)</td>
<td>4.00</td>
<td>4.25</td>
<td>3.80</td>
<td>3.84</td>
<td>3.96</td>
<td>3.60</td>
</tr>
</tbody>
</table>

**Community Perspective**

<table>
<thead>
<tr>
<th>Measure</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Percent of Budget Allocated to Non-reimbursed Care</td>
<td>7.00%</td>
<td>7.00%</td>
<td>5.91</td>
<td>7.00%</td>
<td>6.80%</td>
<td>6.93%</td>
</tr>
<tr>
<td>14. Percent of Budget Spent on Community Health Promotion Programs</td>
<td>0.30%</td>
<td>0.30%</td>
<td>0.32%</td>
<td>0.29%</td>
<td>0.28%</td>
<td>0.31%</td>
</tr>
</tbody>
</table>

**Financial Perspective**

<table>
<thead>
<tr>
<th>Measure</th>
<th>FY 09 Goal</th>
<th>FY 2007</th>
<th>FY 2008</th>
<th>FY 2009 Q1</th>
<th>FY 2009 Q2</th>
<th>FY 2009 Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Operating Margin Percent</td>
<td>1.2%</td>
<td>1.5%</td>
<td>-0.5%</td>
<td>0.7%</td>
<td>0.9%</td>
<td>0.4%</td>
</tr>
<tr>
<td>16. Monthly Revenue (Million) change so shows red…but so</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is the problem.....

**Where is the opportunity?**

- Moving from these views to one where:
  - Each measure is displayed on an appropriate time series chart (Run chart or Shewhart chart)
  - All time series charts are on same page to see the whole system
- Helps us:
  - More accurately assess progress of changes in system
  - Become aware of system interrelationships
  - Appreciate both dynamic and detail complexity
  - Predict performance of the system
What Does a VOM Look Like?

FY 2009 Hospital System-Level Measures

Visual Measurement Systems--Chartbooks
Focus on Flow for Value Streams

Create ‘Chartbooks’

Populate Huddle Boards
Classic Example of the use of data/facts, the right charts to measure, monitor, and manage process performance over time.
Thanks to IHI and Memorial Hermann and Cincinnati Children’s

Flow Dashboard – Memorial Hermann

Thanks to: Efrian Siller
Ellen Bubak
Bela Patel
The most critical component is deployment, implementation, execution, and top-down and cross functional deployment...
The “Flow” Component…
(Efficiency)
Integrated LeanSigma Deployment

Toyota Production System
Developed between 1948 and 1975
Built from early IE foundations and from Ford and US Grocery Store Systems as ‘prototypes’

Component 2—Lean (Efficiency, Productivity)
The Integration of Lean and Six Sigma came into being right around 2000 time frame.

Rath and Strong created their ILSS Road Map and others followed.

Most “Belt” certification programs trained in both Lean and Six Sigma Principles and Methods and Tools.

Business Process Improvement Programs are the cornerstone of Op Ex Programs.
Bringing together Solution Components…..

Solution Elements:
1. Huddles
2. Mentee Matriculation Tool
3. Automated Matching Tool
4. Visible Measurement System
5. Targeted Recruiting
6. Roadmap to 1000+ Cases
PURPOSE:

To share learnings from recent Performance Management System Development initiatives

11:30 Quick Recap of Part I—Foundational Components for Operational Excellence Systems

**Drill down on key components:**
- Planning
- Integrated LeanSigma
- Measurement
- Employee Engagement

12:25 Close out and Adjourn—what’s ahead, Survey, Op Analytics Certification Program
Huddle Basics and Components

- What is a Huddle?
- The Huddle Board itself and Visual Management
- The Huddle Process Purpose and Objectives
- The Huddle Process, Structure and Strategy Deployment and Execution and Continuous Study-Adjust
- Roles, Responsibilities and Accountabilities
- Agenda’s and Agenda Management
- Huddle Facilitation and Leadership
- Energy Management with Huddles, over time
- Related Techniques and Methods
  - 2-Second Lean
  - Gemba Walks
  - Kaizen Events
The Employee Engagement Component.. (QWL, Culture, Climate, Full Potential Employee Perf.)

Tiered Huddles:

- Focus on data/fact based communication, coordination, and process improvement
- Catalyze Change (e.g. 2-second lean)
- Promote communication, coordination and critical ongoing mutual adjustments
- Not ‘regular’ meetings!!!
Huddles are ‘periodic’ get togethers that focus on communication, coordination, mutual adjustments, cross functional sharing, and most importantly focus on using data and facts to improve process performance.

They augment, in some cases, replace ‘regular’ meetings.
In General, this image depicts the structure of Tiered Huddles.

Establishing the frequency and a cadence around the Huddles will be important.

Also, managing information sharing up and down and across the business will be important to success.
What is a Huddle?

• It is a periodic meeting that focuses on ensuring adequate communication within and between ‘units’ in the organization such that coordination and mutual adjustments, real time, can occur.

• The purpose is to drive effective and efficient (and aligned) study-adjust that will continuously improve process performance.

• They are short, :15-30, meetings that ‘huddle’ around a huddle board (physical or virtual).

• They are focused on overviewing:
  
  • Calling the ‘plays’ for the day/week, strategy sharing, Demand updates, etc.
  • Ideas for improvement
  • Status of in-flight improvement work (Retrospectives)
  • Review of Objectives ahead (day or week)
  • Review of Scorecard/Dashboard, key measures that matter to the unit, focus is on measures with the bigger performance gaps and/or measures that should be improving based on improvement work
  • Review of Actual performance on KPI’s in relationship to forward forecasts or requirements for performance.
  • Resource (people, equipment, etc.) availabilities, status
  • Issues, problems that need to be escalated to next tiered huddle
  • Celebration, Shout Outs
Teams, as discussed, will be so critical to success of Op Ex
Speed of Trust is another superordinate component
Facilitating (‘to ease the passage of’) strategy workshops is demanding, challenging, an art probably more than a science.

A successful leader of strategy workshops has acquired the ability to bring the right professional mode of functioning to bear at the right time:

- Acceptant Listener
- Data/fact gatherer, Inquiry Mode
- Small group process provider
- Challenger
- Opinion Seeker/Opinion Giver
- Solution provider
- Coach/Mentor
- Teacher/knowledge and skill provider
- Catalyst

The most critical Requirement for Success—Facilitation knowledge and skills

In Role vs in-Self:
Many leaders/facilitators don’t understand the concept of being in-role vs in-self. It is fundamentally an issue of style flexibility and situational leadership/facilitation.

It is perhaps the single biggest factor causing failure modes in Huddles/Meetings.
The Huddle Board itself

Huddle boards come in many forms and the content and portrayal of data/facts/information on the huddle board can and does vary depending on the nature of the group. There is no one best layout, format.

In operations areas, Huddle Boards are typically large whiteboards. With cross functional, transactional processes the boards are virtual/digital, we utilize Miro.

In general Huddle Boards have the following ‘sections’:

- Key Process Metrics for the Unit (time series data portrayal) organized by Key Result Areas critical for the unit;
- Key Objectives that are in-flight (progress and performance);
- Some sort of ‘start, stop, continue’ ideation, or study-adjust space;
- In Ops Units, information on what’s planned for day, resources available, key issues, etc.
- Other information as required and appropriate.
Purpose and Agenda

PURPOSE:

To share learnings from recent Performance Management System Development initiatives

11:30 Quick Recap of Part I—Foundational Components for Operational Excellence Systems
   Drill down on key components:
   - Planning
   - Integrated LeanSigma
   - Measurement
   - Employee Engagement

12:25 Close out and Adjourn—what’s ahead, Survey, Op Analytics Certification Program
Over 50 recorded Webinars on a wide spectrum of Performance Excellence Topics are available to members of IISE by clicking on this link.

Please contact jswisher@iise.org if you have any difficulty locating a particular webinar.

Just Ahead.....

2022 Webinar Topics under Development

• How to design and develop Balance Scorecard Systems

• IISE Performance/Operational Excellence Track at our Annual Conference Overview (8 Feb)

• Integrated LeanSigma Program Optimization (22 Feb)

• PACCAR/Kenworth Chillicothe Op Ex Overview (March)

• Best of Best ISE Capstone Sr Design Case Reviews (June)

• How to design, develop, deploy Operational Excellence Programs

• And more, 2 per month for 2022.

And don’t forget IISE’s new Operational Analytics Certification Program...
You can download the deck (handouts). You will receive an e-mail tomorrow with certificate and link to recording. You can go to this IISE link soon and get deck and recording. https://www.iise.org/details.aspx?id=46729
INSTITUTE OF INDUSTRIAL AND SYSTEMS ENGINEERS

James Swisher
earned .0.1 CEUs
for attending the Building Performance Management Systems: Sharing Lessons Learned
January 11, 2022

Chief Executive Officer
IISE Annual Conference
Seattle
22-24 May 2022

Operational/Performance Excellence Track is BACK!!

Special Sessions led by CISE thought leaders:

- Novel strategies & tactics for addressing supply chain challenges
- Managing Complexity with Integrated Systems Engineering
- Sustaining high performing cultures and process excellence in the face of hybrid work environments
- Business Process Management 4.0
- Operational Analytics—Driving Benefits Realization faster
Unique Format for networking, learning, sharing, developing

8 Sessions that are ‘blended’ sharing and learning

Sr. Leaders from our CISE Member Organizations will provide thought leadership and structure for these workshop style sessions. They will tee-up the 80 minute sessions with framing aimed at helping you think in a structured, systematic fashion about critical Operational Excellence components/topics.


Sessions include opportunities to ‘teach2learn’, share your own valuable perspectives and points of view rather than just ‘death by powerpoint’. Build your network of professional colleagues and peers.

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

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

1.  Joan Tafoya—Meta & Victoria Jordan—Emory Healthcare: Building Cultures that nurture engagement and catalyze effective and efficient continuous improvement
2.  Kerri Alderman—UPS & Eleke Ukpabi—Ruan: Novel strategies and tactics for address Supply Chain Challenges
4.  Ben Amaba—IBM & Renee Thiesing—Simio: How to create insights and provoke timely decisions and actions in the face of all the data

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

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

6.  Scott Sink—Va Tech & TPG: Operational Analytics—The art and science of designing and developing effective performance measurement, evaluation and improvement systems.
7.  Jim Dobson—retired Disney & Christine Wiesiewski—Consumers Energy & Yves Belanger—Sobeys: Resilience Engineering and Management in the face of Volatility, Uncertainty, Complexity and Ambiguity
8.  David Poirier—The Poirier Group & TBD: Sustaining Cultures and High Performance in an era of hybrid work environments
9.  The ISE Outstanding Capstone Senior Design Showcase and Finalists Presentations: Join the CISE Team for our annual ISE Capstone Poster Showcase and Leadership Mixer. This is a highlight of the Annual Conference for most industry participants. A great opportunity to see the top 20 ISE Senior Design Capstone Projects. Mix and Mingle with the CISE team and the students from some of our great ISE Departments.
10. The Outstanding Service Systems Engineering Competition Finalist Presentations (Vittal Prabhu)

IIE partners with the Penn State Service Systems Engineering Program in the IME Department each year to recognize the Outstanding Service Systems Engineering improvement initiatives, programs and in projects. This is perhaps the most rapidly growing domain of application for ISE and the projects that compete each year from business, industry, academia, government are outstanding.

Other Performance Excellence mini-sessions: We’ll have another 10+ short, 1:20 presentations that will be programmed on Tuesday to round out our Performance Excellence Track.

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


Seattle, IISE Annual Conference, CISE’s Performance Excellence Track—See you there!!
OPERATIONAL ANALYTICS CERTIFICATE
34.0 CEUs

OVERVIEW:
This course provides the broad, comprehensive, and in-depth knowledge and skill base required to make a difference for organizations in the area of Operational Analytics. You’ll be exposed to two structured models and methods roadmaps for designing and creating effective Performance Measurement Systems. There are 10 Modules, the 10th is the final exam and the certification project.
You’ll be walked through a systematic method for doing Operational Analytics and provided with practice/exercises to ensure you do more than just know new things, you’ll build your skill sets also. The course curriculum is a blended model that includes video recordings that have developed specifically for this course from Thought Leaders and Subject Matter Experts in the field from Intel, IBM, Ford, Motorola, The Pointer Group and others. You’ll also have access to outstanding case examples that are integrated Lean Sigma Success Projects but also have strong Operational Analytics Components. And, the course provides “Coaching Huddles”, opportunities for you to interact with our Course Support Specialists.

TESTIMONIAL
"These Operational Analytics Webinars are outstanding, they bring together Principles, Theories, Methods in a way that is easy to understand, follow and put to use. I’m glad to hear you integrating them all into a course.

The development of our Huddles and our Huddle Boards and the Visible Measurement System has been a transformation for our employees and our organization. We’ll never be the same. We truly were data rich and information poor. Now we know how to use the data we have to achieve our organizational performance requirements" – Big Brothers Big Sisters Toronto

WHAT YOU WILL LEARN:
This 140-hour, 10 module program is self-paced and intended to be completed in 3-6 months. At the completion of the program, students will be able to:

> Create powerful charts/graphs and slides that portray data and facts in impactful ways.
> Understand how to create visible and effective measurement systems to support process and organizational performance improvement.
> Be an effective Data Manager and an effective Data Analyst.
> Use data analytics tools (like Minitab) effectively and with confidence.
> Understand how to integrate Operational Analytics with the Study-Adjust process (for example, how to create Huddles and then build Huddle Boards and Dashboards to drive continuous improvement in an organization).
An Operational Analytics Certification will significantly enhance your foundational training.

**Overview**

Organizations are swimming in data, colloquially they are data rich and information poor.

Migrating from Data to Information to Insights and Understanding to Decisions/Actions and ultimately to Business Benefits Realization is the end game.

Organizations are losing at this game today because they don’t have the right knowledge and skill sets to execute the right strategies to harness the power coming from More Data and the ability to move it faster.

Professionals, perhaps most importantly, students in ISE, that become proficient at Operational Analytics will have unprecedented career opportunities.

This program is focused on building your knowledge and skills in a tiered fashion—Understanding to Principles, Methods, Tools to Application Skill Development as the foundation. This comes from this initial blended training program.

Sitting on top of that base, we’ll support your migration to higher levels of Mastery (Analysis, Solution Creation, System Design and Development, Deployment) with the Certification portion of this program.

**Investment Requirement**

**Certificate:**
- ~ 3-6 mos. Elapsed time
- ~ 220 hours (e.g. equivalent to 1, 3 credit hour U/G level class
- $450 for ISE Students (must be members of IISE)
- $575 for Professional IISE members, $725 for professional, non IISE members

**Certification:**
- $250 for Student IISE members
- $950 for Professional IISE Members, $1250 for Professional Non-Members of IISE
We had several target audiences in mind when we designed and developed this course:

1. Industrial and Systems Engineering Undergrads (Seniors) and Grads who want to augment their BSISE degrees;

2. Young Professionals who want to expand Career possibilities, strengthen Resumes, LinkedIn Profiles and have a strong appetite for Analytics;

3. Business Intelligence Professionals who sense that there is more to Analytics than just creating lots of Power BI Reports and realize the real Leaders and Managers are overwhelmed with Data and frustrated that they can’t get IT to support them, as customers, better.
We have 10 Core Modules in the Course:

1. Course Overview and Guidance
2. Operational Analytics Perspectives and Points of View from Thought Leaders
3. Operational Analytics: The Data Management Role
4. Operational Analytics: The Analyst Role
5. Operational Analytics: The Data Scientist Role
6. Operational Analytics: Business Process Improvement and Integrated LeanSigma Role
7. Visible Measurement Systems, how to deploy to support Study-Adjust
8. Operational Analytics: The Management Systems Engineer Role
9. Operational Analytics: Case Studies
10. Operational Analytics Final Exam

Learning Objectives

• Understand the Fundamentals of Operational Analytics through the Voice of Thought Leaders in this field

• Understand and Practice with the Data Management Role—how to get data, store it, organize it, cleanse it, integrate it....

• Understand and Practice with the Data Analyst Role—how to understand the voice of the ‘customer’, how to understand the fundamental questions that need answered, how to convert data to usable information

• Understand Data Sciences—advanced data capture, data management, data analytics by building intelligence and learning into our ‘machines’

• Understand and Practice with the application of Op Analytics to Business Process Improvement and Integrated LeanSigma

• Understand and practice how to bring all this together in the form of Engineered Management Systems and to integrate in Visible Measurement Systems and effective Study-Adjust processes.
Program Highlights

Recently pre-recorded webinar recordings in 60 minute digestible chunks provided by thought leaders and faculty in our program. On-Demand.

Best-in-class Case Studies
- Op Analytics embedded in Process Improvement Projects (6 practical, industry diverse tollgate decks to help you internalize how this works)
- Data Sets from real world projects to aid you in developing reduce to practice skills

The LearnUpon LMS is intuitive and easy to use and has a way for us to Track your Practice work and interact as appropriate.

Virtual Coaching Sessions by Module provided by Faculty
Community Q&A/Chat Boards.
Live, synchronous training sessions monthly.
Competency Development Model

- Foundational Principles, Methods, Tools (Certificate)
  - Take the course, pass the exam

- Reduction to Practice Skills (Certification)
  - Successfully Complete an OA Project (prove you can reduce to practice)

- Advanced Mastery Level (Advanced Certification)
  - Complete the Mastery Level Program (In Development) (proof of breadth and depth)
Special Offer to Webinar Participants today…

https://www.iise.org/TrainingCenter/CourseDetail/?EventCode=OAO

The 10% off Coupon Code is OpAnalytics10