IISE Global Performance Excellence Webinar Series:
Operational Analytics 101: Foundations for Great Performance Measurement Systems

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Our Speaker today and our Sponsor:
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Agenda

11:30-11:40  Scott to ‘tee-up’ the session

11:40-12:10  Operational Analytics Foundations

12:10-12:20  Respond to questions from audience

12:20-12:30  Scott close out and overview what’s ahead in June and July
Data and Experience Foundation

  - Based on Dissertation and Consulting and Research completed 1976-1985


- Practicing—directed, coached over 250 business process improvement projects from 2007-2020 in wide spectrum of industries and for wide range of types of performance problems.

- Still learning more every day.
Key points

1. Good analytics come from good context understanding, use case clarity, good problem statements, clear understanding of DONE;

2. Some people have every skill – business acumen, data management, analytics understanding – to perform a good Operational Analytics – but it tends to result in a slow ‘craft’ development process for most;

3. Investment in the right data foundation has a positive ROI, as analysts move faster when they trust the data – results in faster results;

4. Good data visualizations can tell the right story quickly, because people are predisposed to believe what they see in a chart;

5. There is very positive ROI in getting Operational Analytics well designed and developed– small analytics teams can wield disproportionate influence on the bottom line;

6. Good Operational Analytics provokes more timely decisions and actions – indeed, in most organizational systems, simple and persuasive/influential beats complex/ambiguous every time.
Operational Analytics—Opportunity Framing

Vague, poorly formed idea of the problem, no ‘good’ diagnosis, hence no ‘good’ strategy

We should be measuring more...
We’re data rich and information poor
We’re data poor
Measurement matters
Jump on the Analytics bandwagon
Improve Accountability

Measure what matters!!
Balanced Scorecards
KPI’s
Analytics
Big Data
ERP’s
Power BI, Tableau, ChatGPT, AI........

Clear, Succinct Problem Statement, Vision, Strategic Pathway, Migration Plan

There is a logical strategy path, roadmap, migration plan to follow to build tiered visible measurement systems in our organization.

Learn the strategy path and follow it.

Good Strategy vs Bad Strategy....
Operational Analytics—Opportunity Framing

Avoid the Muddle!

- Systems Thinking and Process Breakdown Structure

- The ‘Management Systems Model’ (Management Systems Engineering)
  - Management Systems Analysis (Value Streams and Control Points)
  - Users and Use Cases
  - Decision-Action (Study/Adjust) Requirements
  - Information Requirements & Portrayal, Perception, Insights to Actions
  - Data Requirements
  - Data Management Requirements
  - Data Analytics Requirements
  - Visualization Requirements

- Getting all the System Components in Place to ensure ‘End Game’ Achieved

- Systems Thinking and Process Breakdown Structure
- The ‘Management Systems Model’ (Management Systems Engineering)

OA 201: CONCEPT DESIGN--

- The ‘Operational Analytics’ ‘Triangle’ Model
- The ‘Questions’, where do we start with Op Analytics Development Projects?
  - Picking the right improvement projects, Portfolio Management, Using Op Analytics as a tool for picking the right improvement projects (how Op Analytics helps with P and S)
  - Seeing, understanding Op Analytics as an integral component of the PDSA, System and Process Improvement Methodology and work
- The Data Design, Development, Management Role
  - Concepts to help with data modeling, data ‘base’ development
  - Creating the foundation upon which Analytics Tools sit and can be fully utilized
- The Data to Information to Insights Role

OA 201: CONCEPT DESIGN—The Data Management and Analyst Roles and Methodology

OA 301: DETAILED DESIGN AND DEVELOPMENT—Developing Visible Measurement and Management Systems that ‘catalyze’ knowing what to improve and how things are improving over time.
  - Building Scorecards and Dashboards
  - Deploying them into Tiered Huddle Systems (as example)

• OA 401: BEST PRACTICES (Case Studies)
  - University Health Network, Toronto, Chief Data and Analytics Officer

• OA 501 and 601 (on drawing board)
  - Advanced Tools to support best in class Operational Analytics
You can’t do ‘good’ Analytics work and not be a good Systems Thinker
ISE’s Create Value by Integrating People, Strategy, Process and Technology

Operational Analytics is the ‘central nervous system and brain’ behind this integration.

The Analyst Role is a rapidly growing and critical to success function in Op Excellence.

Changing the way we exchange value with our employees and manage our culture.

Enhancing the way you think and plan

Performance Excellence

Strategy

Organizational Alignment

People

Speed of Trust

Flow

Process

Tech Acceleration

Technology
Leveraging hyper-connectivity and the full power of IT Enablement

What we do and how we do what we do.
Operational Analytics Begins with the End in Mind
End Game: **Grow Enterprise Value**
The Domain of ISE and Operational Analytics is very broad today
Succeeding at Operational Excellence and Analytics—why it’s a big deal

Built to Last Data

A Transformation that Dave played an integral role in...

$6

$60

$356

$955

$415
Context – The Purpose of Operational Analytics, Analysts

Facilitate & Enable the creation of solutions that enable better decisions faster and then drive actions, improvement implementation, faster and then drive benefits realization faster (desired and positive outcomes) and then grow Enterprise Value (system, process, business value creation).

- Systems Thinking and Process Breakdown Structure
- The ‘Management Systems Model’ (Management Systems Engineering)
  - Management Systems Analysis (Value Streams and Control Points)
  - Users and Use Cases
  - Decision-Action (Study/Adjust) Requirements
  - Information Requirements & Portrayal, Perception, Insights to Actions
  - Data Requirements
  - Data Management Requirements
  - Data Analytics Requirements
  - Visualization Requirements
- Getting all the System Components in Place to ensure ‘End Game’ Achieved
In the pursuit of ‘full potential performance’ in your organization, there are some very basic, fundamental questions that must be answered in the context of Organizational Strategy.

- What are the right systems, sub-systems, business processes, processes to focus on? What is our optimal portfolio? What aligns best to our ‘Good Strategy’.
  - Lots of ways to create the right portfolio (e.g. Theory of Constraints, Pain Point Analysis, Value Stream Analytics to name a few)
- How does the ‘focal’ system/process work?
- How does it perform (the focus of Operational Analytics)
- How do we best improve performance as we’ve operationally defined it? (e.g. mAIc)
- Is Enterprise Value Growing? How do we know?
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

Downstream Systems and Outputs: Orders Fulfilled

The Business Processes/Value Streams

Decisions

Actions

Information perception/understanding / insights

Information portrayal

Data capture

Data entry
The Organizational System—What’s being Managed

An Extended Enterprise
An Org Unit
An Extended Value Stream
A Value Stream or Business Process
An embedded Value Stream or Process
A sub-process

The Business Processes/Value Streams

Upstream Systems and Inputs: Suppliers & customer orders

Downstream Systems and Outputs: Orders Fulfilled
Methods, Tools to use

• SIPOC
• End2End Value Stream Mapping
• Business Process Breakdown Structure
• IDEF
• Observe, walk the process, structured interviews
• Butcher Block or Miro the Value Stream/Swim Lane
• “Smart” Visio, use layering to add or take away detail, zoom in and zoom out capability
DEMAND
Apply, Nominate, referred from Schools, mentees, BB's/BB's, Churches, etc.
Young People with 3-5 Adv Childhood Exp. (ACE's)

SUPPLY
Refer, Nominate, Apply, Volunteer
Mentors Willing to Serve

To Post Development Phase Engagement Process

Young People Ready for Life
Close Match

Pre-Match Team

Profile Created
Enrollment and Assessment team
Asset (40) Assessment

Training

“Ready” Mentee

Match Support Team

Shane—Team Lead

Case Worker, Mentor, Mentee

Development and Evaluation Process

Match Support Team

“Ready” Mentor

Enrollment and Assessment team
Capability Assessment

Marketing and Communications Team
CRM System
Razor’s Edge (Fund Raising and Donor Mgmt)
HRIS (just getting)
Finance and Accounting

Pre-Match Team

Match Support Team

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TPG utilized (compliments of Moresteam) Process Playground to create a simulation model for the front end and back-end of the Value Stream. The model is in validation stages but just doing this significantly improved our ability to understand the system (more than just doing a value stream map).

We will be using the model to confirm our engineered forecasts of solution element impact on LT and Capacity.
Saltine Line Control Points

**MIXING**
Waste = 3.97% (0.56% production)

**SHEET ROLLING**
Waste = 12.01% (1.70% production)

**BAKING**
Waste = 2.82% (0.40% production)

**STACKING**
Waste = 63.49% (9.00% production)

**WRAPPING**
Waste = 17.71% (2.51% production)

**4th Floor**
Waste = 1.66% (production)

**3rd Floor**
Waste = 12.77% (production)

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.
Enterprise Value Creation for BBBST

- By helping them ‘Learn to See and Understand’ with simple value stream maps, the cross-functional team understood where the ‘constraints’ were.

- By introducing the concept of ‘flow’ and getting the ‘buffers’ (good thing) and ‘bottlenecks’ (bad thing) right, adjusted properly they increased the ‘Primary Y’, Served Mentees, by 30% with no additional staffing, all caused by process improvement and a Visible Measurement System and Huddles and some great leadership.
  - Lead time to a ‘match’ and initial meeting came down from 24 months to under 12 and is still improving. (target is 4 months)

- Not an overly complex system but the principles, methods, and tools were verified and are an example I think you all can relate to.
The Management Systems Model—who Manages and how we provide better Decision-Action/Study-Adjust support

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

**Who Leads, Manages**

The Decision Maker
The Team of people accountable for the ‘system’ being managed

What are their needs and requirements?
What’s their Strategy and Plan and how does this initiative fit?

**The Business Processes/Value Streams**

Upstream Systems and Inputs: Suppliers & customer orders

Downstream Systems and Outputs: Orders Fulfilled
Need to understand...

- Who are the key players
  - Executive Sponsors
  - Value Stream Owner
  - Process Owners

- What are the R2A2s (roles, responsibilities, accountabilities, authorities)?
- What are the ‘teams’ and individuals on the ‘team’ information requirements (what they need/want to know, how they prefer to see ‘information’).
  - What’s holding them back from making more timely, better adjustments that will improve performance, continue to drive system and process, value streams towards more optimal levels of performance.
  - What would they like to know that they don’t know, what questions would they like to have answered better, easier, faster?
  - What they articulate, are conscious about AND also what you, as an ISE know they need to know to optimize flow, performance, reduce waste, etc. Benchmarking can help!!

- What’s the ‘strategy’, what is the future state and what’s the migration plan and then how do we measure what matters!!!
Lots of versions of Balance Scorecard

Figure 7
Another tact on ‘Balanced Scorecards’ (Instrument Panel in Cockpit)

HUD: Effectiveness—what are the right things to DO (Start's & Stop's)

Our Future State Vision

Bank 0: Enterprise Value

Bank 1: Profitability/Budgetability

Bank 2: Efficiency—Resource Utilization, Optimization

Bank 3: Innovation Lever—Rate of Improvement

Bank 4: Productivity

Bank 5: Quality_1
Bank 5: Quality_2
Bank 5: Quality_3
Bank 5: Quality_4
Bank 5: Quality_5

Bank 4: Quality of Work Life/Culture

HUD: Effectiveness—What are the right things to DO (Continues)
Methods and Tools

• ‘ERP’ with PowerBI sitting ‘on top’ with Banks of Scorecards & Dashboards sitting in Sharepoint with Tiered Huddles that engage for PDSA
• Chartbooks by ‘unit’ with periodic reviews of performance against ‘spec limits’
• Chart owners to ensure ‘dial’s’ on instrument panels/banks are sustained, fresh, high quality, creating insights and supporting decisions-actions-adjustments.
• Control Point Scorecards/Dashboards—a control point is a spot in the process where we do or should capture data and we do or should make adjustments to how we manage things at that spot. Creating visibility for Control Point performance is a great way to apply analytics.

• What are some of the things you are doing?
The Management Systems Model—information requires data, the data management role

The Business Processes/Value Streams

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

Data management and Operational Analytics

Data capture

Data Organization

Decisions

Actions

Upstream Systems and Inputs: Suppliers & customer orders

Downstream Systems and Outputs: Orders Fulfilled
The Simplest Causal Model—your data model essentially

$$Y_1 \ldots Y_n$$ are the effects of interest

$$X_1 \ldots X_n$$ are the causal variable of interest that we have data for

$$U_1 \ldots U_n$$ are one or more of the unknown or unmeasured variables
\[ Y = \text{function}(X) \]

- Potential Adopters (B)
- Rate of Adoption (R)
- Actual Adopters

*Market Saturation* Loop
*Word of Mouth* Loop

**The Value of Signal (and the Cost of Noise)**

The New Economics of Meaning-Making

Equivalent to 125,000 years' worth of DVD-quality video.

90% of the world's data was created in the last two years.

Is data the new oil?
Organizations that can separate signal from noise are already winning in the market.

SMAC: A $360 billion market by 2016

**MODEL**
Simulation, Analysis

**IMPROVED MODEL**

"The model world"

Reality
Experiment
Too expensive or impossible!

**PROBLEM**
Another take on Systems Thinking.

Sometimes organizations and individuals need help integrating Triple and Double loop learning with Good PDSA (are we doing things right?)
Moving from Big Data to Operational Analytics

Unknown, Unmeasured, Unthought about Data

Identify and figure out how to get
Introducing the OA Triangle Model

- 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 LEGOs
  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
• Most ISE/ILSS Process Improvement Projects require that the ISE/Belt do both roles, certification requires that
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• Foundational data role

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Data Integration – Challenges, Advice, Examples
Example of data integration—hard work but rewards are worth it
Top 10 Key business benefits of using Power BI

1. Superior accessibility
2. Embeddable attributes
3. Rich features
4. Drag-and-drop functionality
5. Powerful connectivity
6. Meaningful reports
7. Continuous updates
8. Data refresh
9. No upfront costs
10. Uncover actionable insights
# Metrics captured within the Site-Based Dashboard

## Site-Based Dashboard

### ISM & BIG G Target
- Owner: Aarya VentraPragada
- Email: mrnaini.gollapudi@gmail.com
- Mentor/Mentee: Brooke Pereira

### ASIP Target
- Owner: Abdullahi Abass
- Email: monsaratbakoia21@gmail.com
- Mentor/Mentee: Akua Anyemedu

### Program List
- All

### Owner
- All

### Program Status Breakdown
- Program Statuses: Matched, Interested, Ready to... (In-Process)
- Total: 129
- In-Process: 55%

### Program Site
- Shorham Public Sports and Wellness Academy: 24
- Downsview Public School: 18
- Eastview Public School: 14
- Forest Manor Public School: 12
- Kapampamahcatwe - Wandering Spirit School: 10
- Humber Summit Middle School: 9
- Chalkfarm Public School: 8
- Military Trail Public School: 8
- Wexford Public School: 8
- Lakeside Public Elementary School: 1
- Total: 129

### Matches per Month YTD
- January: 2
- February: 1
- Quarter 1: 3

### Potential Mentees and Mentors in Screening by Program
- ASIP: 57
- In School Mentoring Adult: 56
- In School Mentoring Teen: 7
- In-school Mentoring Adult: 6
- Big G (ISM): 2
Rounding the Corner on the Model is a Critical to Success Skillset for the Analyst

The Business Processes/Value Streams:

- Upstream Systems and Inputs: Suppliers & customer orders
- Downstream Systems and Outputs: Orders Fulfilled

Data management and Operational Analytics:

- Data Organization
- Data entry
- Data capture

The Business

Decisions

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

Actions

Information perception/understanding/insights

Data capture

Information portrayal
Key Questions and Key Points:

• **Alignment between Information Portrayal** (what’s portrayed and how) and the ‘requirements’ for decision to actions, adjustments, study-adjust driven by a sense of urgency to improve performance and realize benefits is critical.

• How do we get what is typically an inter/multidisciplinary team of people, cutting across multiple functions, with IT perhaps at the ‘heart’ or ‘mind’ I guess of it, to wholistically and effectively improve designs for Visible Performance Measurement Systems? What role can ISE play?
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  6. Apply data visualization techniques to aid in telling the right story – as in life, so in business: the best story wins ...

- the current state process in many large organizations splits data and analytics
- Data are stored in a common place, and are trusted and available
Operational Analytics enables us to understand this causal linkage to Benefits Realization and accelerates this causal path.

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**
- New project planning approach
- Organizational set-up of a factory to reduce waste
- An improved tool

**Benefits**
Measurable improvements providing a business advantage. Benefits can be both tangible or intangible, are often interconnected and stakeholder specific.

**Examples**
- Increase of market share
- Shorter time to market
- Higher employee retention

**Outcomes**
A new operational state achieved after transition of capabilities into live operations. Normally affecting real-world behavior or circumstances, they are the manifestations of the future state implemented.

**Examples**
- Project plans comply to improved approach
- Waste is handled according to new set-up
- A new tool is being used by the organization

By What Method and How will We Know?
How can you do this really fast?
Getting to Visualizations that create insights (aha moments) that provoke timely decisions and actions and improvements is the key

Must do, Accelerate ability to cycle bottom to top on the OA Triangle

- Improved Alignment of OA work with Strategy—better portfolios due to leveraging better OA
- Integrate data creatively, from multiple sources, rapidly using best tools available
- Visualizations must minimize the latency to get to the “Ah-Ha” moment and then drive the causal chain to Benefits Realization
Key points--revisited

1. Good analytics come from good context understanding, use case clarity, *good problem/opportunity statements*, clear understanding of DONE
   - Good problem/opportunity statements have to be have an associated DONE and OKR’s (Objectives and associated Key Results);
   - Analysts need an all-access pass to data and facts & the wisdom and intentionality to collect it
   - Simple techniques trump complex techniques
   - Framing Analytics work in the context of ‘Good Strategy’ is super critical.

2. Some people have every skill – *business acumen, data management, analytics understanding* – to perform a good Operational Analytics – but it tends to result in a slow ‘craft’ development process for most
   - Analytics exists on a steep learning curve – what used to take six months now takes two weeks with the right data and analytics
   - There is little time for ‘craft’ in our business – speed wins
   - Operational Analytics, generally speaking, is not being ‘taught’. A few programs have outstanding curriculum but they are rare, in my view. They have over complicated analytics.
3. Investment in the data foundation has a positive ROI, as analysts move faster when they trust the data – results in faster results
   - Rule for Data Management: storage and speed are generally not issues any more, if it’s there store it, you might need it later (can always aggregate can’t get more granular if it isn’t there)
   - Second Rule of Business Intelligence/Op Analytics – maintain the illusion of simplicity for your customers, Understand the Use Case and the stakeholders keep it simple for them. If there aren’t ‘aha’ moments in your work you’ve failed.

4. Good data visualizations can tell the right story quickly, because people are predisposed to believe what they see in a chart ...
   - Be on guard! Some folks use *How to Lie with Statistics* as a field guide
   - Kahneman’s (Thinking Fast and Slow) and other research on Decision Making and Action Taking Styles and Methods are invaluable prep for Operational Analytics Specialists.
   - Apply Pyramid Principle Thinking and Logic, learn to ‘Resonate’/tell powerful stories with your data to provoke improved study-adjust and business value creation.
Key points

5. There is **very positive ROI** in getting Operational Analytics well designed and developed—small analytics teams can wield disproportionate influence on the bottom line
   
   – Hire Intentionally and Intelligently—there are few people who have the curiosity, sense of urgency, tolerance of ambiguity, and humility for this role
   
   – The catalyst, change agent role is very powerful when powered with great Operational Analytics—get in, learn, analyze, win, get out
   
   – Portfolio Management is everything, it’s a very dynamic process.
   
   – Understand the causal ‘chains’ and stay focused on ‘drivers’ and critical enablers, focus on the right ‘levers’

6. Good Operational Analytics *provokes more timely decisions and actions*—indeed, in most organizational systems, simple and persuasive/influential beats complex/ambiguous every time
   
   – Learn to Tell Stories on individual Slides and ‘Decks’ that Provoke timely improvement and accelerate benefits realization
   
   – Be a fast follower with Analytics Technology, people are enamored with shiny objects, keep it simple, more toys and elegance lose, pragmatic Operational Analytics aimed at rapidly improving process performance wins.
   
   – Stay focused on developing Process Maturity Levels systematically over time and use data/facts to support progress
And, Just Ahead…..

June and July Offerings for you..

An Analytics Mini-Series:

- 27 June—Operational Analytics 201
  - [Register for Op Analytics 201 with this link](#)
- 14 July—(401) Best Practice Case Study—Data and Analytics at University Health Network, Toronto
  - [OA 401) Register for Best Practices in Analytics UHN Toronto](#)
- 18 July—Operational Analytics 301
  - [Register for Operational Analytics 301](#)

Capstoned by a Feature Article in the ISE Magazine in August.
OA 201 is up next... 27 June


- Systems Thinking and Process Breakdown Structure
- The ‘Management Systems Model’ (Management Systems Engineering)

OA 201: CONCEPT DESIGN--

- The ‘Operational Analytics’ ‘Triangle’ Model
- The ‘Questions’, where do we start with Op Analytics Development Projects?
  - Picking the right improvement projects, Portfolio Management, Using Op Analytics as a tool for picking the right improvement projects (how Op Analytics helps with P and S)
  - Seeing, understanding Op Analytics as an integral component of the PDSA, System and Process Improvement Methodology and work
- The Data Design, Development, Management Role
  - Concepts to help with data modeling, data ‘base’ development
  - Creating the foundation upon which Analytics Tools sit and can be fully utilized
- The Data to Information to Insights Role
Certificates and Certifications

- Stick with the Series and earn an OA Certificate with CEU’s from IISE.

- Consider IISE’s Operational Analytics Certification.
  - An on-demand course that takes this Series a level deeper, works on skill development.
  - Essentially a 4 ch level, Semester Course in OA.
  - Tailoring and coaching encouraged and provided.

  - For more on this, please contact James Swisher jswisher@iise.org
Context – reading list provided from Intel Global SCM Analytics team member (Moneyball is a great movie if you haven’t seen)

- Journey from craft to volume
- Profit from fixing inefficiencies
- Understand why things fail
- Recognize human biases
Illustrative Contextual Fundamental Guiding Principles for Analysts—For Further Study

- *Resonate*
- *Data Story*
- *Influence + Persuasion*
- *Measure What Matters*
- *The Pyramid Principle*
- *Good Strategy Bad Strategy*
- *OKRs: The Simple Idea That Drives 10x Growth*
- *The Fifth Discipline Fieldbook*

Training Center

Operational Analytics Certificate & Certification Program
Op Analytics
Development Options

## Time/Cost
- **On campus or Hybrid MS Programs**: 1-2 yrs, $50-100k
- **On-Line, Virtual**: 4 days to 6 mos. $600-$5,000
- **Hybrid/Blended Model**: 120 hours ++, $400 students + $250 for certification. $475/675 member/non-member + $550 for the certification

Op Analytics represents huge opportunity for ISE’s

In Partnership with:
The Poirier Group
Moresteam University

Delivered Uniquely:
IISE Digital Op Ex ‘Mall and Stores’
- 10+ Video Modules for easy, self-paced consumption/learning
- ‘Chat’ Support with Coaches
- Periodic Huddles for virtual coaching
- 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
10 fundamental modules make up the certificate program.

On-demand Learning Management System.

Chat Coaching and periodic ‘huddle’ coaching included.

Approximately 120 hours of studying designed to be completed in 6 months or less.
Feature Extraction

Organizational System Key Result Area (KRA’s)

- Effectiveness
- Efficiency
- Quality
- Productivity
- Innovation
- Quality of Work Life
- Profitability/Budgetability
- Sustainability/Resilience/Optionality

Key Results/Key Performance Indicators

One of the critical roles of the Analyst is to ‘understand the system’ (Deming’s Profound Knowledge) causally and select the right metrics (Measure What Matters).

This is the essence of Feature Extraction.

Often this comes right from Value Stream Mapping and the identification of ‘control points’ (spots in a process were we do or can or should capture data and also where we can ‘manage’ the process).
This problem is nothing new and has actually been the focus of prior improvement projects. We will take a look at 2 project that have sought to reduce the process variability and in turn, reduce waste.
Knowledge Extraction

Key Results/KPI’s (outputs from analytics)

- Lead Time
- Throughput Capacity
- Process Capability
- Yield Loss
- Cycle times
- Takt time
- Engagement
- Competency Level
- Process Maturity Level
- Temperature
- Pressure
- Etc., etc..

Data/Facts portrayed in a way that creates insights, tells a story, helps us see and understand, answers questions (Learning to See)

Analysts in Training struggle mightily with the difference between Feature Extraction and Knowledge Extraction and it can be subtle but often is very distinct and critical to success.

There is an art to it which is why it’s difficult to teach and at times difficult to master.
Q4 2022 Theme—Org/Op Excellence in Turbulent Times

- September—Insightful Leadership: Surfing the Waves to Organizational Excellence (Jim Tompkins)
- September—Creating Improved Operational Excellence in Times of Economic Uncertainty and Challenges (David Poirier & Jim Dobson)
- December—Planning to Improve Productivity in Disruptive Economic Times (Scott Sink)
We’ll build off our Op Ex/Analytics Series past and just ahead

120+ on-demand Professional Development Webinars in 10 categories of Performance Excellence

Just for you!!

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Operational Analytics

Improve your knowledge and skills with data and fact management, how to support timely decisions and actions.

- Operational Analytics: You Can’t Manage What You Can’t or Won’t Measure
- Data Sciences 101: The Science Behind Data Sciences
- ISEE Operational Analytics Certification Program Overview for Students and Practitioners
- Operational Analytics: The Analyst and Decision/Action Support Role
- Operational Analytics: The Data Management Role
- Data Analytics and AI: People, Process, and Technology
- Operational Analytics: ISEE Certificate Program Overview
- Operational Analytics: Creating “AHA” Moment Visualizations
- The Role of Data and Information (Engineered Management Systems) in Periods of Major Disruption
- Operational Analytics: New Frontiers for ISEs
- Operational Analytics: Sustainable Visual Measurement Systems
- Operational Analytics for Integrated LeanSigma Process Improvement Projects Part IV
- Operational Analytics for Integrated LeanSigma Process Improvement Projects Part III
- Operational Analytics for Integrated LeanSigma Process Improvement Projects Part II
- Operational Analytics for Integrated LeanSigma Process Improvement Projects
- A Framework of Best Practices for Delivering Successful Artificial Intelligence Projects

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
- ISEE 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
Operations Analysis

The abundance and growth of machine data, which can include anything from IT machines to sensors and meters and GPS devices, is another major driver of big data solutions. In its raw format, many organizations are unable to leverage machine data. Yet disregarding this data means that organizations are making business decisions based only on a subset of available information. Leveraging machine data and combining it with existing enterprise data enables a new generation of applications that are able to analyze and gain insight from large volumes of multi-structured machine data—which in turn improves business results.

**WHAT DO YOU NEED TO SUCCEED?**

- **Get the Context**
  Overcome complexities to perform advanced analysis and provide context across different data sets.

- **Capture a Complete View**
  Access large volumes of machine, operational and transactional data and combine with other enterprise data.

- **Get Insights From Analytics**
  Release intelligence trapped in your data, allowing agile interpretation and action.

- **Get Logs & Machine Data**

**THE RESULTS**

- **Empower the C-Suite**
  Reassure decision makers that they are acting with full knowledge & understanding of all available data.

- **Improve Reliability**
  Perform root cause analysis on data to more easily identify and preempt system failures, keeping customers happy.

- **Speed Operations**
  Help departments proactively minimize the problems and bottlenecks that stymie the flow of operations.

- **Monitor & React**
  Visualize streaming data to monitor the end-to-end infrastructure and deliver real-time alerts.

Learn more at IBM.com/BigData
Moving from Ad Hoc, Process Maturity Level 1 with Operational Analytics to PML’s 3-5 as appropriate.

A nice picture for Op Analytics I think…
https://hbr.org/2012/10/the-true-measures-of-success

https://hbr.org/2017/05/whats-your-data-strategy
Operational Analytics, done right, minimizes latencies and enhances ability to drive more rapid benefits realization.

Reduce the cycle times on each step in this implicit process.

Executing the Analytics Triangle effectively enables more rapid decisions and actions and positions for more rapid benefits realization.
Operational Analytics, done right, minimizes latencies and enhances ability to drive more rapid benefits realization.
No Time for Muddle....it’s a time for “Triple-Loop Learning”