Social Service Systems Engineering: How ISE’s can help Engineer Value for Social Services

Moderated by:
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Global Perf Excellence
Webinars IIE

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Chair in Service Enterprise
Engineering at Penn State
University

Louise Smith
Interim Executive Director at Eva's Greater Toronto Area, Canada

Cherie Ann Pereira
Social Worker | Monitoring, Evaluation, Research and Learning Specialist | Social Impact Measurement
Canada

Meg Small
Director of Social Innovation, Bennett Pierce Prevention Research Center at Penn State University

24 August 2021
PURPOSE: To share Perspectives and Points of View and Case Examples of how ISE is being applied in Social Service Systems

12:00 Scott and Vittal to tee-up the session

12:10 MICRO/MACRO: Needs, Challenges Opportunities at the Agency, local level and at the System Level

12:20 Louise and Cherie Ann to share Voice of Social Service Provider Perspective, Needs, Challenges, Opportunities, and Case Examples of What’s Worked/working

12:35 Meg and Vittal to share system level Solutions

12:50 Wrap up and Close-out
ISE’s Create Value by Integrating People, Strategy, Process and Technology

Social Service Systems have unique challenges relative to achieving Operational Excellence.

Partnering with ISE resources represents a unique opportunity to master these challenges.

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

Enhancing the way you think and plan

Strategy

Organizational Alignment

People

Speed of Trust

Performance Excellence

Flow

Process

Tech Acceleration

Leveraging hyper-connectivity and the full power of IT Enablement

What we do and how we do what we do.
At the Delivery level this is a nice model for how the innovation can take place.

You’ll hear about how this is happening with Eva’s and BBBST in Toronto.
Often in Social Service Systems, it is the Process and Technology components that are most challenging.

Technology is ‘buyable’ but the integration of process, people, technology is difficult to implement effectively.
1—What are the unique Challenges and Opportunities that Social Service Providers face that can be addressed and capitalized on by partnering with ISE resources? Micro/Macro

2—Vittal to provide overview of Prevention Services.

3—Meg on the challenges of scaling evidenced based services

4—Scott & Louise and Cherie Ann to provide executive overviews of how TPG’s Purpose Beyond Profit Program has benefited their organizations and how ISE can help organizations that are providing Evidence Based Services can improve their Capability to be more Effective and Efficient.

5—Scott to wrap up and close out.
What are the needs, special challenges, opportunities in Social Services that ISE can contribute to?

Local Agency View (Louise and Cherie Ann and Scott)

- struggle with ‘technology enablement’
- don’t understand how to improve process maturity and improve flow and capacity
- Data rich and information poor, not leveraging the data we have

System View (Meg and Vittal)

- How do you balance delivery of social services with the evaluation of the value of those services?
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Engineering Prevention Services

Vittal Prabhu
Penn State
Prevention Services

• Objective is preventing mental, emotional, and behavioral (MEB) disorders among young people

• It is estimated that 14 to 20% youth experience MEB disorders

• MEB and other problem behaviors (e.g. early drug, alcohol use, aggressive behavior, and violence) take an enormous toll

• The quantifiable cost of such disorders among young people was estimated to be $247 billion per year in 2007

Decision-Making Models in Planning Prevention Services

Budget allocation priority to prevention programs based on total budget

Predictive Analytics for Delivering Prevention Services
Screening, Diagnosis, and Intervention Processes

### Potential Benefit of Predictive Analytics

<table>
<thead>
<tr>
<th></th>
<th>Current approach</th>
<th>Proposed approach</th>
<th>Improvement (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOCA cost</td>
<td>9,260</td>
<td>9,260</td>
<td>0.00</td>
</tr>
<tr>
<td>DISC cost</td>
<td>18,520</td>
<td>1,560</td>
<td>91.58</td>
</tr>
<tr>
<td>Intervention cost</td>
<td>378,885</td>
<td>291,785</td>
<td>23.00</td>
</tr>
<tr>
<td>Social cost</td>
<td>-</td>
<td>15,202</td>
<td>-</td>
</tr>
<tr>
<td>Total cost</td>
<td>406,665</td>
<td>317,807</td>
<td>21.85</td>
</tr>
</tbody>
</table>


Fundamental Questions/ Agenda

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Challenges in Scaling Evidence-based Preventive Services

Dr. Meg Small, Director of Social Innovation
Translating Knowledge and Evidence into Systems

**Old Model:** Maximizes efficacy
Translated into underprepared systems

**New Model:** Optimizes evidence & uptake
New service design methods
- Data rich environment
- System Readiness

![Diagram showing the old and new models of knowledge translation](image-url)
New Initiative . . . But still missing system processes
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The Poirier Group Purpose Beyond Profit Program

• David Poirier is the Immediate Past President of IISE and the CEO of The Poirier Group.

• TPG commits and deploys 25% of it’s ‘benchtime’ to serving Non-Profits in the Greater Toronto area.

• Eva’s and Big Brothers Big Sisters of Toronto are two great examples of organizations we have served over the past 2 years.

• I’ll let Louise and Cherie Ann briefly explain why they reached out to TPG and at a high level what results we are helping them create.
PPMS and The Tiered Huddle Concept—an example of what 4.0 requires

This is a very effective image of Tiered Huddle System Design. Our Design calls to integrate PPMS into the tiered PDSA process so that the measurement process is interwoven, naturally, into the process improvement (Study-Adjust) component.
Louise Smith, COO at Eva’s

Kay Dyson
Impact and Innovation Mgr. at Eva’s

Rachael Cass
Administrative Assistant at Eva's Innovation, Strategy & Evaluation team

Anastasia Gordon, Corporate Partnerships Mgr. at Eva’s Initiatives

Beth Bebreab, Exec Asst. to Exec Dir and COO Eva’s
**PURPOSE STATEMENT:** Create Migration Strategy and Plan to take our IT Enablement System and overall Business Process Management System to the next level of Maturity

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**CURRENT STATE**
*(Sept 2020)*
- EVA needs/wants an IT Assessment
- EVA needs to improve IT Enablement to support remote work for staff and Youth Programming
- EVA needs improved accessibility and connectivity
- EVA needs to create Virtual Learning Opportunities for Youth Programming
- EVA is interested in improving the ‘integrated’ performance of their people, strategies, workflows with Technology Enablement

**FUTURE STATE**
*(Dec 2020)*
- IT and Business Process Assessment complete and documented
- Migration Strategy and Plan detailed, understood, and underway
- IT ‘position’ staffed
- IT Enablement specific capability development prioritized
- A clear strategy for ensuring People, Strategy, Process and Technology are better integrated is documented.

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**Migration Strategy**
- Define current state IT System, Business Processes, R2A2, and Pain Points
- Requirements Definition: what do you need/want the IT Enablement ‘system’ to be, do in 2023?
- Design: flesh out, develop a concept design for EVA IT Enablement
- Develop: create a migration strategy and plan
- Decisioning on Migration Strategy
- IT enablement ‘seat on bus’ defined and filled?

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**IT Enablement System ongoing Management**
- 10 Sept
- 29 Oct
- 18 Dec
TPG Bus Process and IT Enablement Management System Process Maturity Scorecard for EVA’s

- Business Process and Value Stream Infrastructure Clarity (Defined, Visual, Standard Work, Communication & Coord., etc.)
- Value Stream/BP Ownership (seats on bus) Clear R2A2
- Critical Alignment Points Defined and Managed
- IT Enablement Requirements Defined
- IT Enablement Current State Explicitly Understood
- IT and BP Migration Strategy, Plan, Execution
- IT specialist Role ‘covered’ Governance, Migration Strategy Execution, etc.

Current state
Future state

0—non-existent, 1—ad hoc, variable, 2—defined, repeatable, 3—managed, 4—measured and improved, 5-optimized
Roadmap: DEFINE current state IT System, Bus Processes, R2A2, and Pain Points

1. Kick-off
2. Identify SMEs
3. Conduct interviews
4. Document current status IT Systems
5. Define requirements
6. Document current status Business Process
7. Develop migration plan
8. Design (Flesh out concept for future state)
9. IT lead in place
10. Decisioning and Migration Plan Execution

DEFINING current state:
- Bus Processes
- IT Systems
- R2A2
- Pain Points
- Requirements

7 & 8
- On-hold pending TPG resourcing availability
- Need to discuss go forward motivation and strategy
- Detailed Migration Plan is next major step

4 & 5 & 6
- IT infrastructure fact finding
- Business process interviews and mapping

Complete
Work in Progress

Future State
Requirements met
The Key Objectives (Questions)

<table>
<thead>
<tr>
<th>Key Objective 1: Shorten <strong>Lead Time</strong> from Mentee accepted to First Mentee/Mentor/Case Worker Meeting</th>
<th>Key Objective 2: Increase <strong>Steady State Process Capacity</strong></th>
<th>Key Objective 3: Start, Stop, Continue with mod’s anything and everything.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Result:</strong> Lead Time from ~2 years to 4 months</td>
<td><strong>Key Result 2:</strong> from ~320 (in-process at any point in time) to 1000.</td>
<td><strong>Key Result 3:</strong> found the right levers and pushed them, created the new process capability</td>
</tr>
</tbody>
</table>
**PURPOSE STATEMENT:** Execute on the prioritized levers to establish improved flow, fix process before add cost/resources!!

**CURRENT STATE**
(April 2021)
- System and Process Defined, Modeled, analyzed
- Pain points, opportunities, wastes, chokepoints identified and solution elements prioritized
- Strategy for People, Strategy, Process and Technology integration developed, agreed to and migration path work underway
- Quick Wins prioritized and being capitalized on
- Tougher Solution Elements prioritized and ownership/accountabilities and plans underway

**Phase II Project Plan**

<table>
<thead>
<tr>
<th>Tollgate 1 April</th>
<th>Launch Solution Element projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 1—Huddle Board, Teamboard, Huddles</td>
<td></td>
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<tr>
<td>SE 2—Value Stream Balancing and Flow for 1000 vs 250 (verify with simulation)</td>
<td></td>
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<tr>
<td>SE 3—Match Process Re-engineering</td>
<td></td>
</tr>
<tr>
<td>SE 4—Visible Meas System, Chartbook</td>
<td></td>
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<tr>
<td>SE 5—Targeted Recruiting Strategy</td>
<td></td>
</tr>
</tbody>
</table>

**2nd round of SE’s will be integrated beginning in June**

**Weekly Huddles—Sprint Concept with Monthly – Qtrly Reviews**

**FUTURE STATE**
(Dec 2021)

**OKR Process**
**Key Results:**
- Lead Time capability = < 6 mos
- System Capacity = 300+ pairs in flight
- Fixed process first—optimized investment/cost (best value solution)

**Key Objectives accomplished:**
- Dashboard a ‘habit’—Study-Adjust
- Sprinting on projects understood
- Push to pull achieved—flow established
- Value Stream Owner exists and functions
- Top 10 improvement projects completed or well underway
The 3rd step, session 2 for BBBST we utilized Miro to do Silent Generation and then a Delphi Technique method to do the voting an ranking you see here.

### Ideas that align to the Lean Strategy and Principles

<table>
<thead>
<tr>
<th>Process Improvement Ideas</th>
<th>Total Voting</th>
<th>Sum of Votes</th>
<th>Productivity Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create automated match-making tool that shows potential matches, make the matching process more visible and automated</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Need to separate the E&amp;A position with two job areas (1—assessments, 2—matching)</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Webinar for 'bigs' 101 so staff isn't required to facilitate with a function to ensure successful completion</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Streamline, reduce, evaluate level of involvement of Case Workers after year 3 of the mentoring process to free up time to handle more year 1 &amp; 2 workload</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Automated system for tracking where they are in process</td>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Need a tracker/countdown system for potential mentors—visibility on status of process to stakeholders</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Establish clear specs on how long matching should take and how many are required each week to sustain required flow and create a Visible Measurement System, do Huddles weekly, use the charts to do Study Adjust and integrate into PMP</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Involve, engage volunteers in other activities while they wait to be paired</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>System to book match introductions that synch's to NSE calendars (that can book more than 1 person)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Automated system that shares documents and on-line forms—e-mail sent to assessor upon completion</td>
<td>1</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>
We completed extensive interviews with every team member and ‘mapped’ and analyzed the value stream.
We wanted to use data/facts to help us tell a story and get them connected to what we are creating in relationship to what we said we want to, choose to create.
And then we created a Value Stream Map that highlighted the ‘buffers’ at each control point which clearly depicts gaps in current state (poor flow) which in turn is why we are serving mentees instead of the required 1000.
This is what we intend to have happen over the next 2 years (this is a conservative improvement curve with slow addition of personnel to the process) “Get Good, then Get Fast”
Contextual Fundamental Guiding Principles for Analysts
Where to find our digital library of past Webinars

Over 50 recorded Webinars on a wide spectrum of Performance Excellence Topics are available to members of IISE by clicking on this link.

Our IISE TV Channel is allowing you to customize what you have personalized access to.

Sept 14: IISE *Operational Analytics Certification Program Launch—Overview for ISE Students and Practitioners*

Register with this link
https://attendee.gotowebinar.com/register/5560236216382159884

Oct 7: *Business Process Management 4.0—a Glimpse at what’s ahead*

Register with this link
https://attendee.gotowebinar.com/register/7929275855425721356
Op Analytics
Development Options

Training Center

120 hours ++, $450 students + $250 for certification
$675/875 member/non-member + $550 for the certification

Hybrid/Blended Model

On-Line, Virtual

4 days to 6 mos. $600-$5,000


1-2 yrs, $50-100k

On campus or Hybrid MS Programs
Op Analytics represents huge opportunity for ISE’s

In Partnership with:
The Poirier Group

Delivered Uniquely:
IIESE Digital Op Ex ‘Mall and Stores’
- Video Recordings for easy, self-paced consumption/learning in ~:60 chunks
- ‘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: Value Stream and Process Improvement Analytics
Module 7: Operational Analytics—Visual Measurement/Management Systems
Module 8: Operational Analytics: Putting it All Together: Management Systems Engineering Role
Module 9: Operational Analytics: Case Studies
Module 10: Final Exam and Certification Requirements Definition Document
Module 11: Bonus Module—ISE’s Engineering Value in Times of Disruption