The Challenges of Complex Enterprises
Requires a Systems Approach

- New strategic systems perspective
- Viewing enterprises as **holistic** and **highly networked** systems
- Integrating leadership processes, lifecycle processes and enabling infrastructure systems
- Balancing needs of multiple stakeholders working across boundaries

MOVING FROM THE PAST
(hierarchical) enterprise

TOWARDS THE FUTURE
(networked) enterprise
Creating a Holistic Approach to Enterprise Transformation

**Transformation Issue**

- How do I motivate and sustain enterprise transformation?
- How do I transform my enterprise?
- How do I assess my progress?
- What analytical tools can I use to support my decision making?
- How do I design my future enterprise?

**Enterprise Methodology**

- 7 Principles of Lean Enterprise Thinking
- Enterprise Transformation Roadmap
- Lean Enterprise Self Assessment Tool (LESAT)
- Enterprise Strategic Analysis and Transformation (ESAT)
- Enterprise Architecting Framework
7 Principles of Lean Enterprise Thinking

1. Adopt a holistic approach to enterprise transformation.

2. Identify relevant stakeholders and determine their value propositions.

3. Focus on enterprise effectiveness before efficiency.

4. Address internal and external enterprise interdependencies.

5. Ensure stability and flow within and across the enterprise.

6. Cultivate leadership to support and drive enterprise behaviors.

Enterprise Transformation Roadmap

**STATEGIC CYCLE**
- **Determine Strategic Imperative**
  - Articulate Business Case for Lean
  - Focus on Stakeholder Value
  - Leverage Lean Gains
- **Perform Stakeholders Analysis**
- **Define As-Is Value Stream**
- **Perform Enterprise Assessment**
- **Create Vision of Future State**
- **Define “To-Be” Enterprise Value Stream**
- **Perform Gap Analysis**

**PLANNING CYCLE**
- **Understand Current State**
  - Perform Stakeholders Analysis
  - Define As-Is Value Stream
  - Perform Enterprise Assessment
- **Capabilities & Deficiencies Identified**
- **Envision & Design Future Enterprise**
  - Create Vision of Future State
  - Define “To-Be” Enterprise Value Stream
  - Perform Gap Analysis
- **A Committed Leadership Team**
- **Long-Term Corrective Action**
- **Short-Term Corrective Action**

**IMPLEMENTATION CYCLE**
- **Create Transformation Plan**
  - Identify Key Enterprise Improvement Project Areas
  - Determine Impact Upon Enterprise Performance
  - Prioritize, Select and Sequence Project Areas
  - Publish Communication Plan
- **Implement & Coordinate Transformation Plan**
  - Develop Detailed Project Implementation Plans
  - Synchronize Detailed Plans
  - Implement Projects and Track Progress
  - Commit Resources
  - Provide Education & Training
- **Engage Leadership in Transformation**
  - Convey Urgency
  - Foster Executive Lean Learning
  - Obtain Executive Buy-In
  - Establish Executive Lean Transformation Council
- **Pursue & Sustain Enterprise Transformation**
- **Align Enterprise Infrastructure**
  - Align Organization
  - Align Incentives
  - Empower Change Agents
  - Rationalize Systems & Policies
  - Align Metrics
- **Alignment Requirements Identified**
- **Nurture, Process & Imbed Lean Enterprise Thinking**
  - Monitor & Measure the Outcomes
  - Nurture, Process, & Imbed Lean Culture
  - Capture & Diffuse Lessons Learned
  - Synchronize Strategic Long-Term & Short-Term Cycles
- **Strategic Implications of Transformation**
- **Strategic Cycle**

Source: Nightingale, Srinivasan and Mize

http://lean.mit.edu
Lean Enterprise Self Assessment Tool (LESAT)

Tool for executive self-assessment of the present state of “leanness” of an enterprise and its readiness to change

Downloaded over 3400 times

Capability maturity model

Supporting materials

http://lean.mit.edu
Enterprise Strategic Analysis for Transformation (ESAT)

An integrated, analytical framework for diagnosing and improving overall Enterprise performance.

- Focuses on Enterprise-wide processes
- Provides a cohesive method for diagnosing an Enterprise to expose sources of waste and barriers to value delivery
- Considers the needs and values of all enterprise stakeholders
- Identifies process interfaces, disconnects, and delays
- Establishes an Enterprise vision for the future
- Identifies improvement opportunities that will lead the enterprise to its future state
Enterprise Architecture Framework

Source: D. Nightingale and D. Rhodes
Enterprise Principles Deployed in Action Research and in Graduate Courses

• Graduate Courses (project based)
  • “Integrating the Lean Enterprise”
  • “Enterprise Architecting”
  • 65 cases

• Enterprise Transformation Cases with executive teams
  • Industry
  • Gov’t
  • 9 cases

• Multiple Domains and Industries
## Transformation Case Studies

<table>
<thead>
<tr>
<th>Industry</th>
<th>Organization</th>
<th>Reason to Transform</th>
<th>Insights from Enterprise Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>Air Cargo Carrier Program</td>
<td>Reduce costs and cycle times</td>
<td>Multiple stakeholder (industry, government regulatory) essential for enterprise success</td>
</tr>
<tr>
<td></td>
<td>Space Center</td>
<td>Long development /procurement times at high cost</td>
<td>Criticality of including extended enterprise, including key suppliers and requirements generators</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Mental Health Hospital</td>
<td>Breaking cultural norms to drive needed change, improve service and reduce costs</td>
<td>While experts in patient care, enterprise analysis uncovered traditional behaviors were inadequate for enterprise optimization and operation across boundaries.</td>
</tr>
<tr>
<td></td>
<td>Hospital</td>
<td>Emergency Dept. overcrowding</td>
<td>Traditional lean approaches prone to sub-optimization. Enterprise thinking unveiled strong interdependencies with other hospital units (inpatient, operating rooms, etc) and external entities (insurance companies, primary care, etc). Ensuing transformation efforts adopted holistic principles.</td>
</tr>
<tr>
<td></td>
<td>Medical Device Manufacturer</td>
<td>High growth rate; improve quality and profitability</td>
<td>Requires governance structure to oversee enterprise transformation; critical to span cross-organizational boundaries</td>
</tr>
</tbody>
</table>
## Transformation Case Studies

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<tr>
<td>Services</td>
<td>Commodity Provider</td>
<td>Misalignment of customer service with development and delivery platform</td>
<td>Leveraged front end enterprise interface while supplying holistic stakeholder value propositions; adopted both effectiveness as well as efficiency measures</td>
</tr>
<tr>
<td>Automotive</td>
<td>Auto Manufacturer</td>
<td>Reduced time-to-market in global product development</td>
<td>Required more than just traditional R&amp;D – streamlined cross functional information exchange across organizational boundaries key to transformation</td>
</tr>
<tr>
<td>Government</td>
<td>Air Logistics Center</td>
<td>Increase aircraft availability, Commercial competition for logistics support</td>
<td>Shared enterprise strategic vision provided focus for prioritizing projects to achieve increased mission effectiveness</td>
</tr>
<tr>
<td></td>
<td>Acquisition, Technology and Materiel Support</td>
<td>Higher levels of support to the field at reduced costs and cycle time; organizational integration</td>
<td>Integrated enterprise model requires extensive involvement of leadership, inclusion of supply base and integration of processes with IT systems</td>
</tr>
</tbody>
</table>

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Enabling Enterprise Excellence

Discovery - Deployment - Renewal

Research Shapes Deployment

Enterprise Research
We study Enterprises to identify best practices, transformation strategies and future Enterprise architectures

Transformation Knowledge Deployment
We transform research-based knowledge into education, products, knowledge exchange events, and transformation events

Deployment Shapes Research

Stakeholder-Centric Value Creation
LAI: A Consortium Dedicated To Enterprise Performance

- Enable Enterprises to effectively, efficiently and reliably create value in a complex and rapidly changing environment
- Enable focused and accelerated transformation of complex enterprises
- Collaborative engagement of all stakeholders in Industry, Government and Academia
- Understand, develop, and institutionalize principles, processes, behaviors and tools
LAI - Expanding Enterprise Focus

Increasing Total Enterprise Effectiveness

1993

Operations
Functional lean successes
- Manufacturing
- Supplier Networks

“Islands” of Success

Successes through interaction between functions
Lean applied to enabling processes
- HR
- IT, etc.

Success through enterprise integration & application to Product Dev
Transition from waste minimization to value creation

Success through total enterprise integration of all stakeholders
- Industry
- Government
- Suppliers
- Employees

Expanding the lean boundaries
- Suppliers
- Customers
- Partners

NOW

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LAI Research Groups Address 4 Grand Questions

1. How can I understand the way my organization currently operates within its larger context?

2. How can I define and evaluate the future possibilities for a more efficient and effective enterprise?

3. What are the most effective strategies and tactics to achieve these future possibilities for my enterprise?

4. How can I best manage the enterprise change process?

FOCUS of RESEARCH
- ESE Approaches
- SE Effectiveness Indicators
- Studies of ESE Practices (with MITRE)

FOCUS of RESEARCH
- Lean Product Development
- Lean Systems Engineering
- Lean Software
- ESE Approaches
- SE Effectiveness Indicators
- Studies of ESE Practices (with MITRE)

FOCUS of RESEARCH
- Enterprise Value Analysis
- Enterprise Architecting
- IT as Enterprise Enabler
- Enterprise Cost and Metrics
- Enterprise Modeling

FOCUS of RESEARCH
- Change Management
- Enterprise Change Philosophy
- Studies of Successful Change
- Distributed Leadership

http://lean.mit.edu