Progress Report: IMPLEMENTATION TOOLSET For Building Lean Supplier Networks

January 30-31, 2001

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NOTE: Work-in-progress; this material represents the work product of the Lean Enterprise Initiative (LAI) Supplier Networks Research Team; prepared for review and comment only.
Emphasis at this workshop: on FRAMEWORK & ROADMAP
Focus

• **FRAMEWORK** self-assessment ("What")
  – Tool for gauging current state in lean journey in the *supplier network design and management domain*
  – Links up with Lean Enterprise Self-Assessment Tool (LESAT)
  – Encompasses key lean practices & lean capability levels
  – Self-scoring framework

• **ROADMAP** for building lean supplier networks ("How")
  – Implementation guide defining major building blocks & specific implementation steps -- sequence & relationships
  – Maps out process template -- inputs, outputs, barriers, enablers, metrics, tools & methods, references

**OBJECTIVE:** Develop integrated lean implementation toolset
• **FRAMEWORK**
  – Draft version developed by Steering Group (Sept 20-21, 01 -- Boeing Long Beach) & subsequent work in conjunction with LESAT
  – Ready for review & further refinement to develop ALPHA version

• **ROADMAP**
  – ALPHA version developed through effort of entire team at workshops on-going work by subteams & consolidation by Steering Group Workshop Jan 13-14, 00 WPAFB, OH
    • Team meeting, LAI Plenary Conference, March 29-30,00 Cambridge, MA
    • Workshop June 21-22,00 CMTC, Torrance, CA
    • Steering Group, Aug 10-11, IAMS, Cincinnati, OH; Sept 21-22,00 Boeing Long Beach)
  – Maps out process template -- inputs, outputs, barriers, enablers, metrics, tools & methods, references
  – Ready for further refinement & testing
**DEFINITION:** Develop and manage the lean enterprise supplier network to provide best value to the customer over the entire product lifecycle, in order to optimize dynamic sustainable competitive advantage.

*Input:* Enterprise-level supplier network design and management system, structure, processes, activities and metrics

*Output:* Assessment of the level of leanness of the enterprise in the supplier network design and management domain

**OVERARCHING LEAN PRACTICES**

1. **Develop and manage supplier network strategy linked to corporate strategy:** Design of the supplier network -- its structure, composition, and definition of differentiated roles and responsibilities -- reflects core corporate strategic thrust to ensure long-term success.

2. **Supplier relationships focus on optimizing the value stream:** The supplier network is managed to create and deliver best value to the customer over the entire product lifecycle; major suppliers are viewed as full partners in the success of an integrated value network; emphasis on fostering continuous network-wide learning, knowledge-sharing and innovation.
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<tbody>
<tr>
<td><strong>1.0</strong></td>
<td>Develop and manage supplier network strategy linked to corporate strategy</td>
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<td><strong>2.0</strong></td>
<td>Integrate product and process knowledge, and foster innovation, over the entire supplier network</td>
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<td><strong>3.0</strong></td>
<td>Maximize flexibility and responsiveness of the supplier network</td>
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<td><strong>4.0</strong></td>
<td>Establish long-term cooperative relationships with suppliers to maximize mutual benefits throughout the value stream Contender</td>
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<td><strong>5.0</strong></td>
<td>Establish process of continuous performance improvement throughout the supplier network</td>
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Traditional -- No awareness of lean supplier network design and management principles, practices, processes, activities or metrics

Learner - Limited awareness, but evidencing early stages of largely informal and piecemeal lean implementation deployed in one or a few areas

Performer - Systematic approach to lean implementation; deployed in all appropriate areas, functions and processes, with some still in relatively early stages

Contender - Mastery of lean principles and implementation; deployed in all appropriate areas; on-going refinement and continuous improvement

Leader - Exceptional command and implementation of lean principles; well-defined and innovative approach; lean fully deployed in all appropriate areas; recognized as world-class best practice

*Note: Levels are cumulative; each higher level represents the achievement of the prior levels
Supplier relationships focus on optimizing the value stream

<table>
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<tr>
<th>Level</th>
<th>Description</th>
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<td><strong>Level I</strong></td>
<td>Large and hierarchical supplier base; arm’s length &amp; adversarial relationships; build-to-print; supply chain management concentrated in purchasing department; no alignment of supply chain design with corporate core competencies; no visibility into supplier capabilities</td>
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<td><strong>Level II</strong></td>
<td>Supplier base rationalized; some teaming/partnering with suppliers with high impact on strategic objectives; long term purchase agreements are introduced to focus on affordability &amp; cost reduction; limited visibility into supplier business processes</td>
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<td><strong>Level III</strong></td>
<td>Long-term relationships established with limited number of certified suppliers; early involvement of suppliers in design process; synchronization of production flow over supplier network; delegation of greater responsibility to key suppliers; effective supplier development program in place</td>
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<td><strong>Level IV</strong></td>
<td>Cooperative relationships with suppliers, including strategic partnerships and alliances, are in place, emphasizing a high level of information sharing, risk sharing, benefit sharing, and knowledge-sharing; differentiated supplier strategy</td>
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<td><strong>Level V</strong></td>
<td>Dynamically optimizing the value stream, through electronic integration of the supplier network, to achieve long term sustainable competitive advantage</td>
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Enterprise-Level Transition-to-Lean Roadmap

Entry/Re-entry Cycle

Adopt Lean Paradigm
- Build Vision
- Establish need
- Foster Lean Learning
- Make the Commitment
- Obtain Senior Mgmt. Buy-in

Initial Lean Vision

Long Term Cycle

Focus on the Value Stream
- Map Value Stream
- Internalize Vision
- Set Goals & Metrics
- Identify & Involve Key Stakeholders

Detailed Lean Vision

Develop Lean Structure & Behavior
- Organize for Lean Implementation
- Identify & Empower Change Agents
- Align Incentives
- Adapt Structure & Systems

Environmental Corrective Action Indicators

Short Term Cycle

Focus on Continuous Improvement
- Monitor Lean Progress
- Nurture the Process
- Refine the Plan
- Capture & Adopt New Knowledge

Detailed Corrective Action Indicators

Create & Refine Implementation Program
- Identify & Prioritize Activities
- Commit Resources
- Provide Education & Training

Outcomes on Enterprise Metrics

Implement Lean Initiatives
- Develop Detailed Plans
- Implement Lean Activities

Enterprise Level Implementation Plan

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ROADMAP for Building Lean Supplier Networks

1. Define Vision
2. Develop Strategic Plan
3. Establish Lean Infrastructure
4. Create Lean Implementation Plan
5. Implement Lean Initiatives
6. Strive for Continuous Improvement
# ROADMAP for Building Lean Supplier Networks

## 1.0 Define Vision
- 1.1 Develop working knowledge of basic lean principles for building lean supplier networks
- 1.2 Ensure stakeholder commitment & align expectations (e.g., mutual expectations
- 1.3 Define enterprise vision for supplier integration
- 1.4 Establish guiding principles driving strategic plan development process
  - 1.4.1 Define dynamic sustainable competitive advantage
  - 1.4.2 Define enterprise core competencies and future trajectory
  - 1.4.3 Provide strategic rationale guiding make-buy decisions

## 2.0 Develop Strategic Plan
- 2.1 Develop detailed knowledge of lean principles for building lean supplier networks
- 2.2 Develop basic elements of strategic plan to achieve vision
  - 2.2.1 Define goals, objectives and metrics
  - 2.2.2 Perform strategic map of value creation processes: Identify own core competencies & complementary supplier capabilities (high-level; “as-is”; “to-be”; gap analysis; define compelling case for change)
  - 2.2.3 Define make-buy decision process
  - 2.2.4 Design supplier network to optimize dynamic competitive advantage
  - 2.2.5 Define major change strategies (e.g., strategic alliances; e-business; knowledge management; fostering innovation)
- 2.3 Define principal roles and responsibilities, relationships, governing principles and rules of behavior
- 2.4 Define infrastructure support requirements
- 2.5 Develop resource plan for executing strategic plan

## 3.0 Establish Lean Infrastructure
- 3.1 Refine infrastructure support requirements
- 3.2 Define requirements and create organizational structure and process
- 3.3 Develop supporting infrastructure systems
- 3.4 Develop training requirements and develop training tools

## 4.0 Create Lean Implementation Plan
- 4.1 Define prerequisites for developing an implementation plan
  - 4.1.1 Define requirements for implementation plan
  - 4.1.2 Refine lean principles, practices, processes & metrics guiding the implementation plan
  - 4.1.3 Define & map supplier value stream (current state, future state), identify gaps and major opportunities
- 4.2 Develop framework for implementation
  - 4.2.1 Develop framework for supplier segmentation & differentiated set of “must do” steps at different levels
  - 4.2.2 Develop supplier selection criteria
  - 4.2.3 Assess capability and lean competency of suppliers
  - 4.2.4 Identify and prioritize supplier development initiatives
  - 4.2.5 Develop supplier qualification and certification process
  - 4.2.6 Assemble implementation toolset
- 4.3 Create relationship-management plan with suppliers
  - 4.3.1 Procurement plan (including e-business)
  - 4.3.2 Long-term relationships; partnerships; strategic alliances
  - 4.3.3 Contract design (strategies, incentives, gainsharing)
  - 4.3.4 Target costing
  - 4.3.5 Information-sharing, cost-sharing, risk-sharing
- 4.4 Create plan for knowledge management & fostering innovation
- 4.5 Commit resources for lean implementation

## 5.0 Implement Lean Initiatives
- 5.1 Refine, operationalize and communicate goals, objectives and metrics throughout the supplier value stream
- 5.2 Implement lean transition initiatives (on-going)
  - 5.2.1 Select suppliers
  - 5.2.2 Perform supplier qualification and certification
  - 5.2.3 Deploy supplier development & mutual improvement initiatives
  - 5.2.4 Initiate targeted change models (internal, external) – Radical, incremental; pilots (pilot-evaluate-scale up)
  - 5.2.5 Implement procurement plan (e-business) & collaborative design initiatives with suppliers within digital environment
  - 5.2.6 Implement performance based contractual relationships (e.g., long-term relationships; partnerships; strategic alliances; mutual gainsharing arrangements)
  - 5.2.7 Conduct internal and external training as appropriate to achieve lean implementation objectives
- 5.3 Implement steps for managing knowledge & fostering innovation over supplier network

## 6.0 Strive for Continuous Improvement
- 6.1 Modify and refine implementation strategy based on supplier network performance
  - 6.1.1 Measure progress (metrics)
  - 6.1.2 Report metrics (ROI, “lean dividend”) (e.g., long-term relationships; partnerships; strategic alliances; e-business)
  - 6.1.3 Define areas for further improvement
  - 6.1.4 Recognize achievements
  - 6.1.5 Transfer ownership of lean process to suppliers
  - 6.2 Nurture the process of continuous improvement (internal, external)
- 6.3 Capture, adopt and share new knowledge
- 6.4 Communicate needed changes in vision, strategy, support infrastructure, implementation plan, and implementation strategy

NOTE: Based on September 21-22, 2000 meeting of the Steering Group of the Lean Aerospace Initiative (LAI) Supplier Networks Research Team; work-in-progress; for review and comment only within the Lean Aerospace Initiative (LAI)
Further refine & develop the FRAMEWORK & ROADMAP modules; develop GUIDEBOOK; integrate toolset (est. Aug 01)

Beta test the integrated toolset -- host companies using the toolset and providing feedback on its usefulness (est. Sept-Oct 01)

Complete and provide Beta Version of the toolset (est. Dec 01- Jan 02)