



# United States Air Force Air Logistics Centers: Lean Enterprise Transformation and Associated Capabilities

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# Unique Opportunity for this Research

- **Three projects allowed for increased access for interviews and shop tours**
  - **Warner Robins case studies of the C-130, C-5, and Purchase Request lean efforts**
  - **Alpha-test of EVSMA with Ogden**
  - **Beta-test of EVSMA with Oklahoma City**
- **Looking to understand the enterprise transformation efforts at each ALC in order to identify best practices that can be generalized for other Air Force locations**
- **All comparisons will be done in light of previous LAI research and products, as well as organizational change literature**

# Key Research Questions

- 1. How have the capabilities, resources, and conceptual models embraced by the ALC leadership teams affected their lean enterprise transformation process?**
- 2. What change tools and capabilities could be incorporated into the EVSMA process and the LAI Transition to Lean Roadmap, in order to improve the lean enterprise transformation results?**
- 3. What are the policy implications for large, government enterprises in undertaking lean improvement and transformation efforts?**



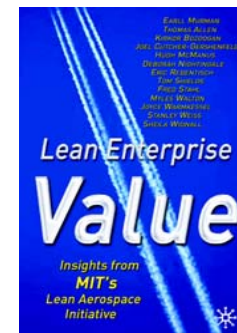
# Presentation Overview

- **What is Lean Enterprise Transformation?**
- Air Logistics Centers and LAI
- Research Methodology
- Key Research Questions

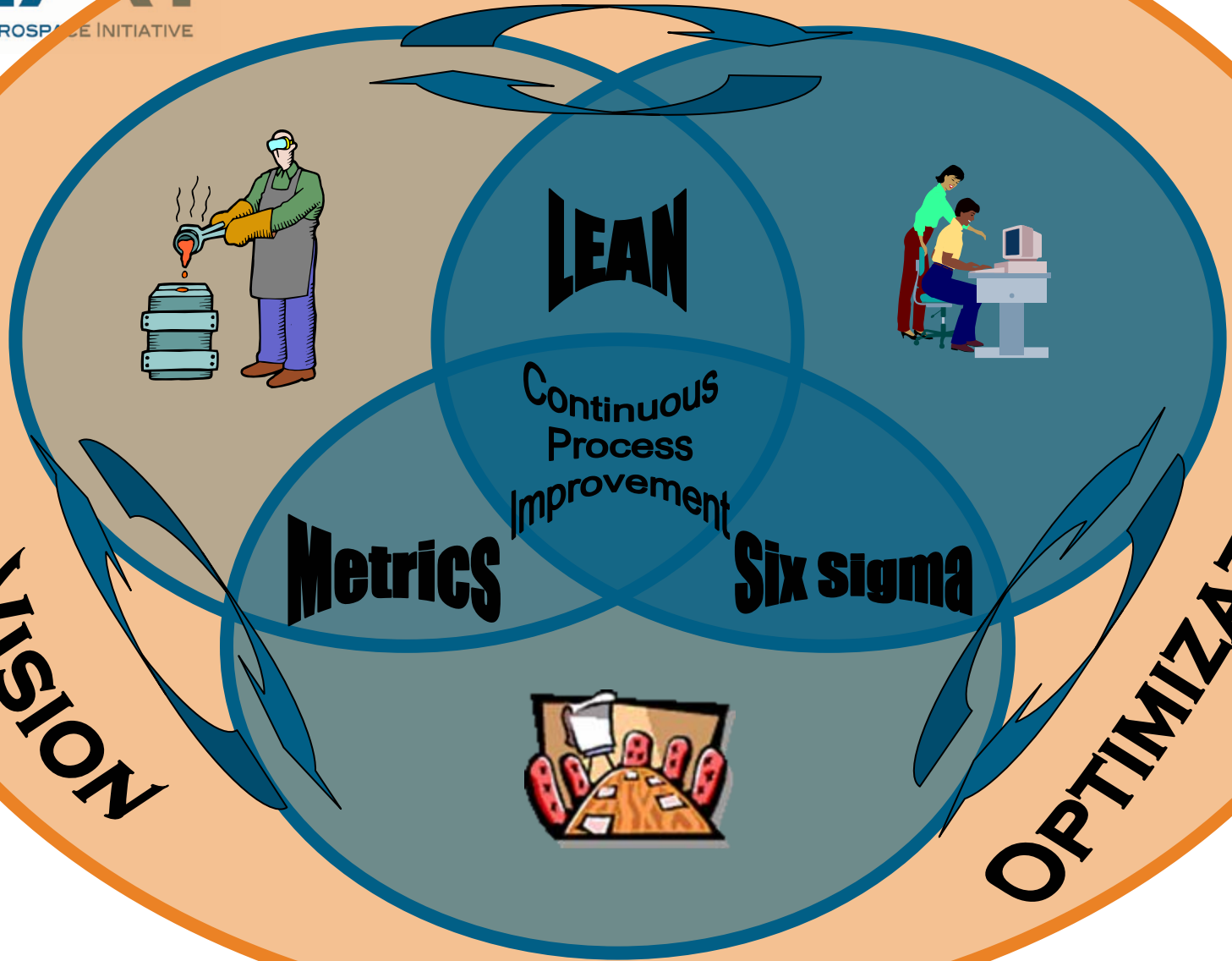
# What is a Lean Enterprise?

***“A lean enterprise is an integrated entity that efficiently creates value for its multiple stakeholders by employing lean principles and practices.”***

***– Lean Enterprise Value,  
Murman et al.***



**LEADERSHIP**



**VISION**

**OPTIMIZATION**



# Lean+Enterprise+Transformation

- Substantial, **sustained, complementary change** of Processes and Structures,
- **Across organizations** comprising a value stream,
- Shaped by organizations' leaders, embraced by their employees and stakeholders, in response to organizational threats, and
- **Adopting the Lean Interpretive Scheme** of maximized value added, minimized waste, and employee learning and commitment.



# Enterprise Transition to Lean (TTL) Roadmap

## Entry/Re-entry Cycle

**Adopt Lean Paradigm**

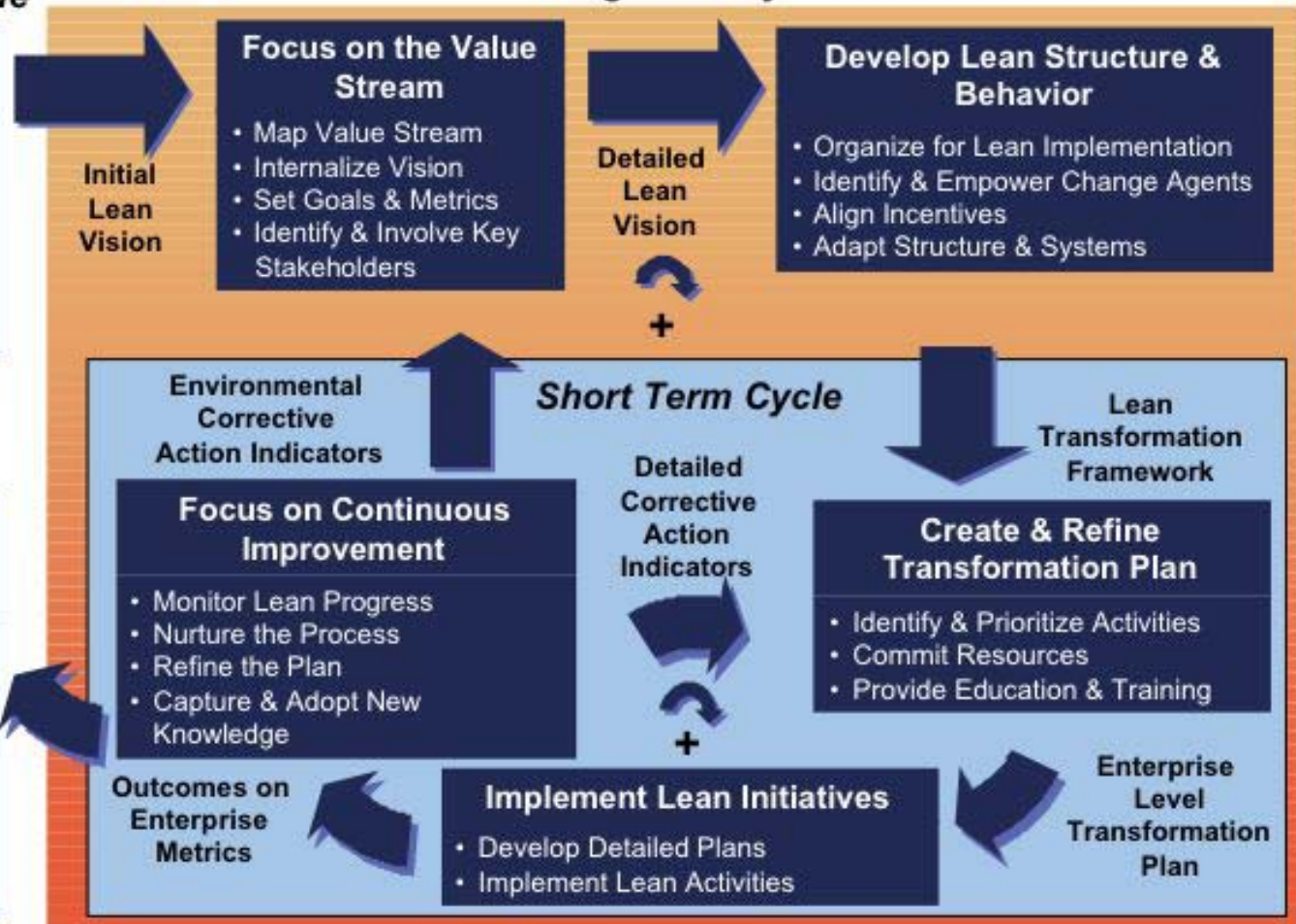
- Build Vision
- Convey Urgency
- Foster Lean Learning
- Make the Commitment
- Obtain Senior Mgmt. Buy-in

**Decision to Pursue Enterprise Transformation**

**Enterprise Strategic Planning**

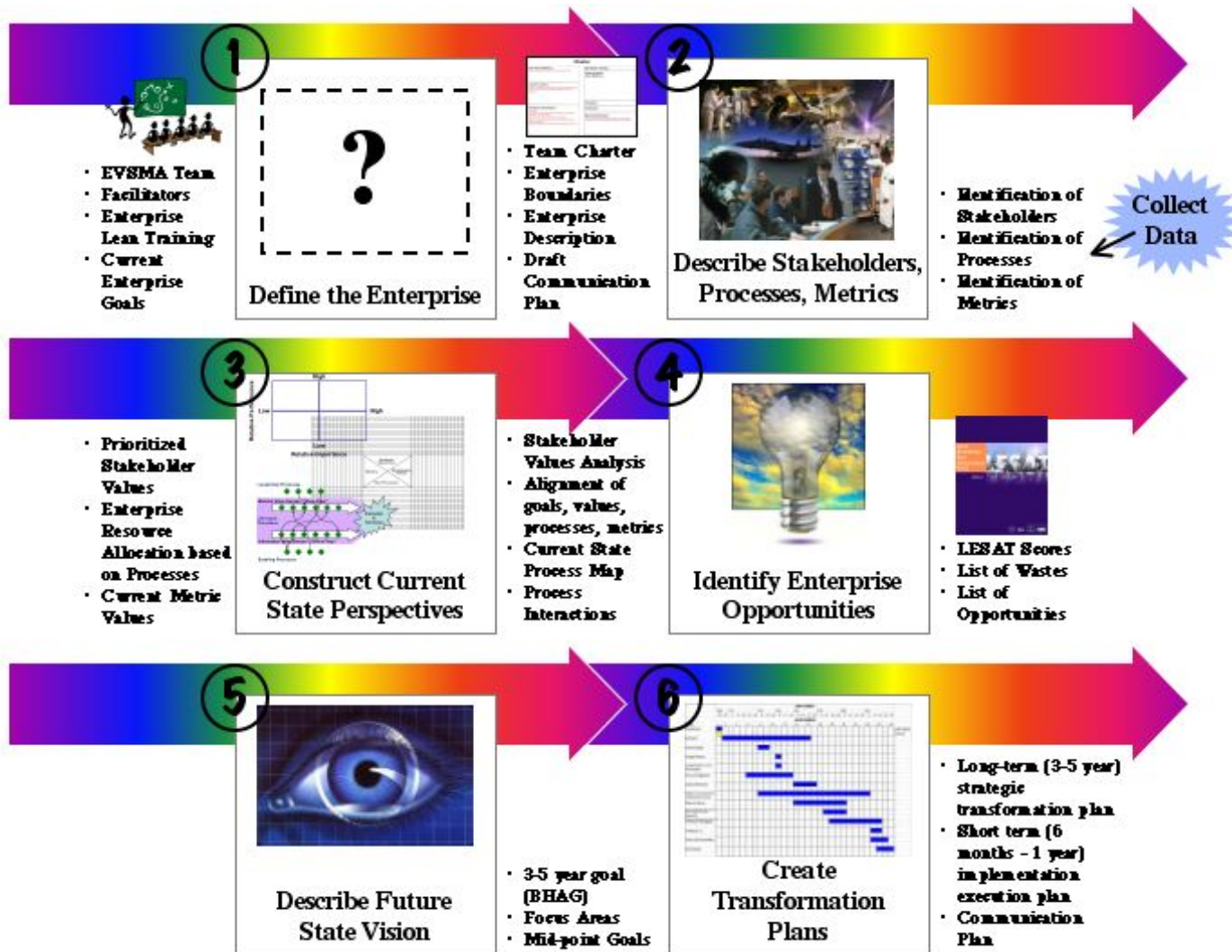
- Create the Business Case for Lean
- Focus on Customer Value
- Include Lean in Strategic Planning
- Leverage the Extended Enterprise

## Long Term Cycle





# Enterprise Value Stream Mapping and Analysis (EVSMA)

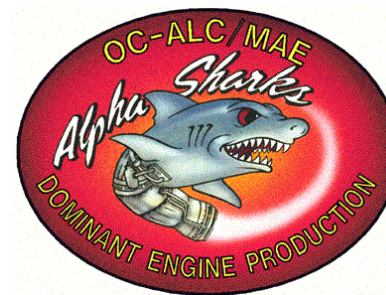


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# Air Logistics Centers

- The maintenance and repair organizations of the AF
- They are part of the Air Force Materiel Command
- There are three ALCs today
- Organized into four wings
- Each ALC has approximately 20,000 employees and conducts over \$5 billion in business every year
- Transformation (at all levels) is imminent



- The LAI Enterprise Change Group was tasked by the LAI Executive Board to work more closely with the Air Force and study their transformation efforts
- The LAI Transition to Lean Roadmap is being applied to the ALCs
- Enterprise Value Stream Mapping and Analysis was developed by LAI as a way to begin the transformation process
- Current work provided access to all levels of the ALC

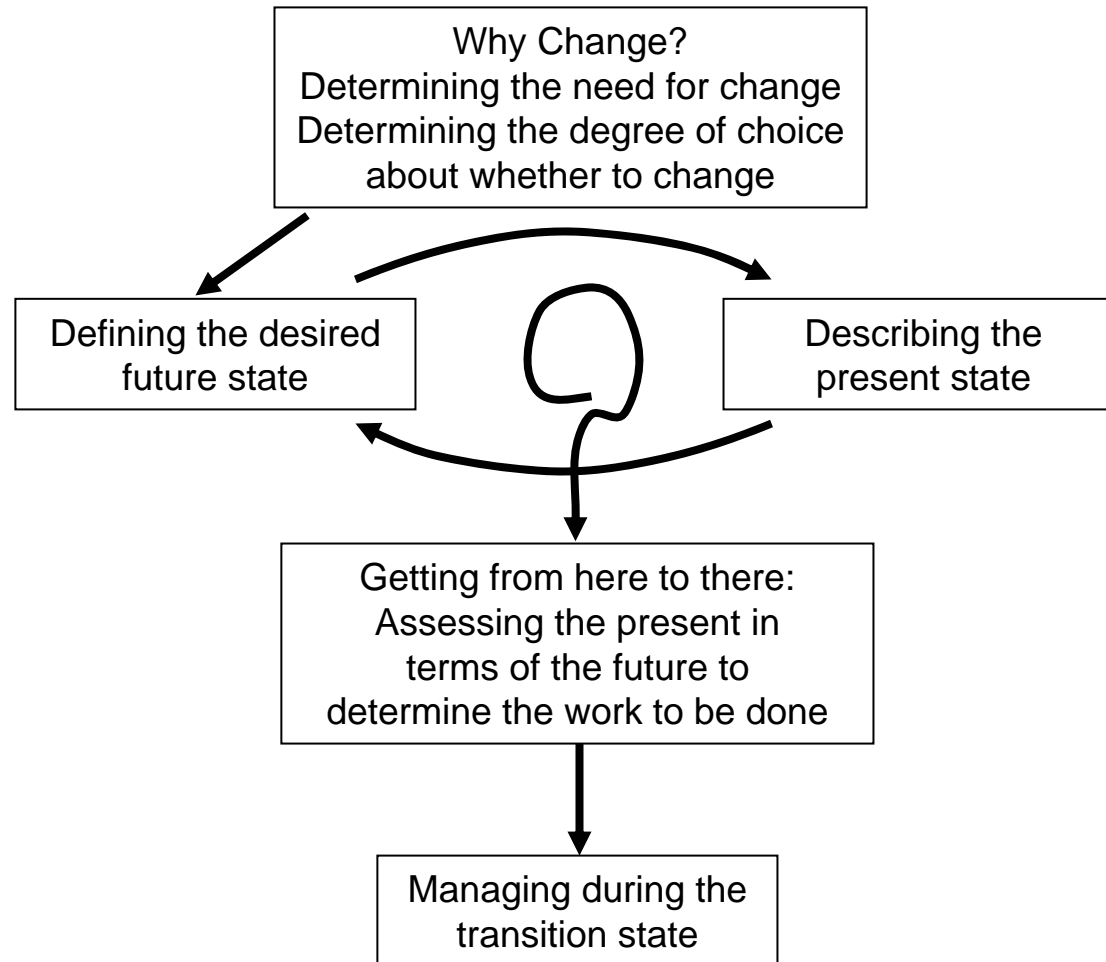


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- **Purchase Request case study of Warner Robins**
- **Observations of EVSMA engagement at Ogden and Oklahoma City**
- **Over 80 interviews conducted with individuals at all levels throughout each command**
- **Examination of transformation efforts observed through the theoretical lens of change literature**
- **Research questions were developed following observations and interviews (inductive study)**
- **Qualitative data analysis (timeline, coding materials, sorting and organizing into themes and writing) conducted**

# Planned Change Model

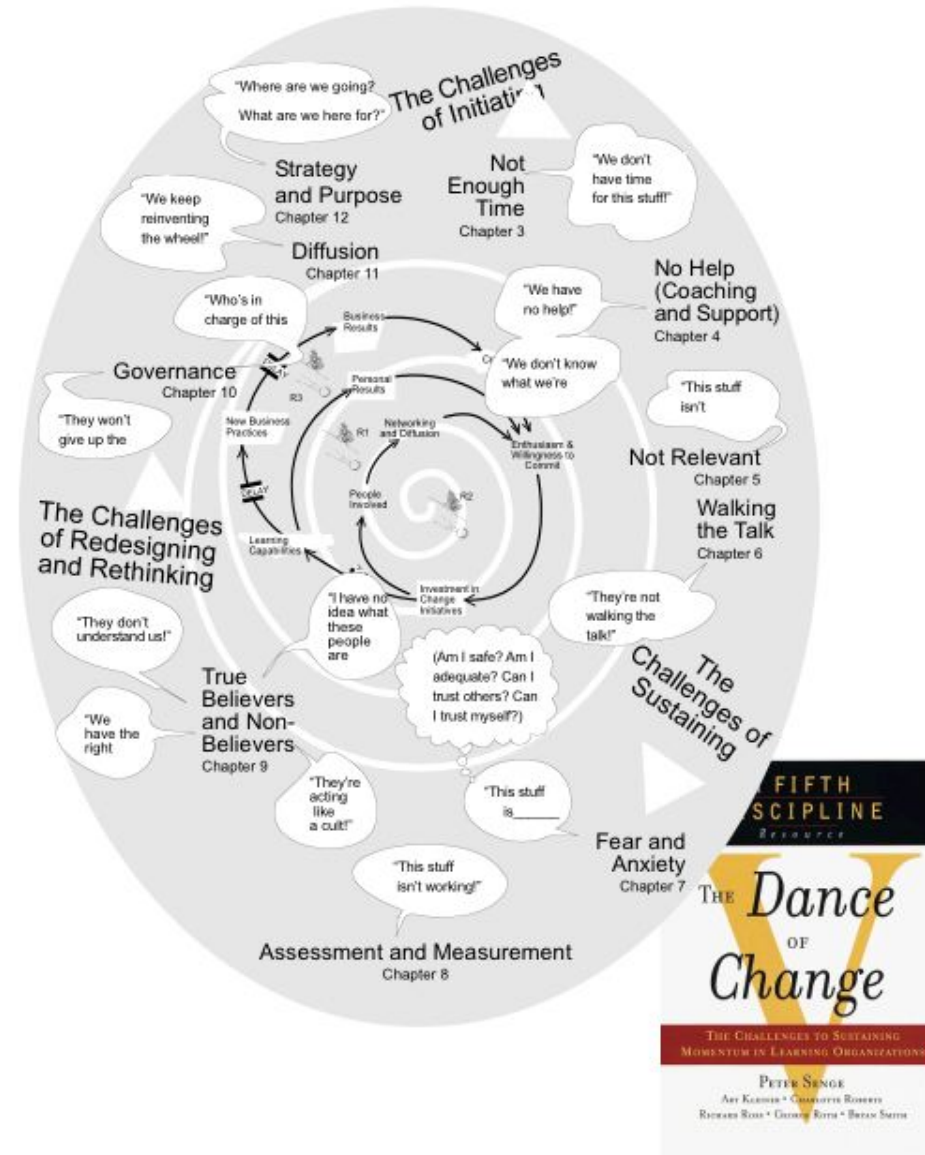


From Beckhard & Harris, Organizational Transitions, Addison-Wesley, 1987



# Sustaining Learning and Change

*Capability-based model of reinforcing and balancing forces*



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# How have the capabilities, resources, and conceptual models embraced by the ALC leadership teams affected their lean enterprise transformation process?

- **ALCs have not emphasized alignment of core processes and enterprise level activities  $\Rightarrow$  this leads to a stagnated transformation process**
- **Leadership personalities, and the lack of involvement, are affecting the willingness of employees to change**
- **“Middle Managers” are impeding change**
- **It is difficult to select the correct people to be change agents and work on lean projects  $\Rightarrow$  these roles must be clarified**
- **Consistent and just-in-time training is crucial for development of change capabilities**
- **Other change efforts are competing for resources**



# **What change tools and capabilities could be incorporated into the EVSMA process and the LAI Transition to Lean Roadmap, in order to improve the lean enterprise transformation results?**

- **EVSMA creates a unique environment of regular and relatively informal meetings for leaders and change agents**
- **Enterprise level strategic planning is necessary, but not sufficient for successful transformation**
- **Development of capabilities that enhance bottom-up change (change agents, training for everyone, community of scientists, data driven work environment) should be considered up front and often**
- **Leadership mental models must be challenged**
- **Metrics (identification, baseline assessment, and continued measurement) and their importance must be stressed**



# What are the policy implications for large, government enterprises in undertaking lean improvement and transformation efforts?

- **Federal fiscal policy establishes monuments that may remain un-moveable**
  - There is no “profit motive” that we see in commercial endeavors
  - Advance requirements definition prohibits just-in-time inventory and development capabilities
  - Congressional budgeting cycle negates “savings” and insists upon “cost avoidance”
- **Human resources policy and employee mental models will likely conflict with lean enterprise transformation**
  - Seniority requirements impede selection of preferred change agents
  - The tradition of rapid leadership turnover plus lifelong employment for civilian personnel leads to the “I can wait this out” attitude
- **In general, transformation will be more difficult, but not impossible, in this environment**



# Any Questions?