



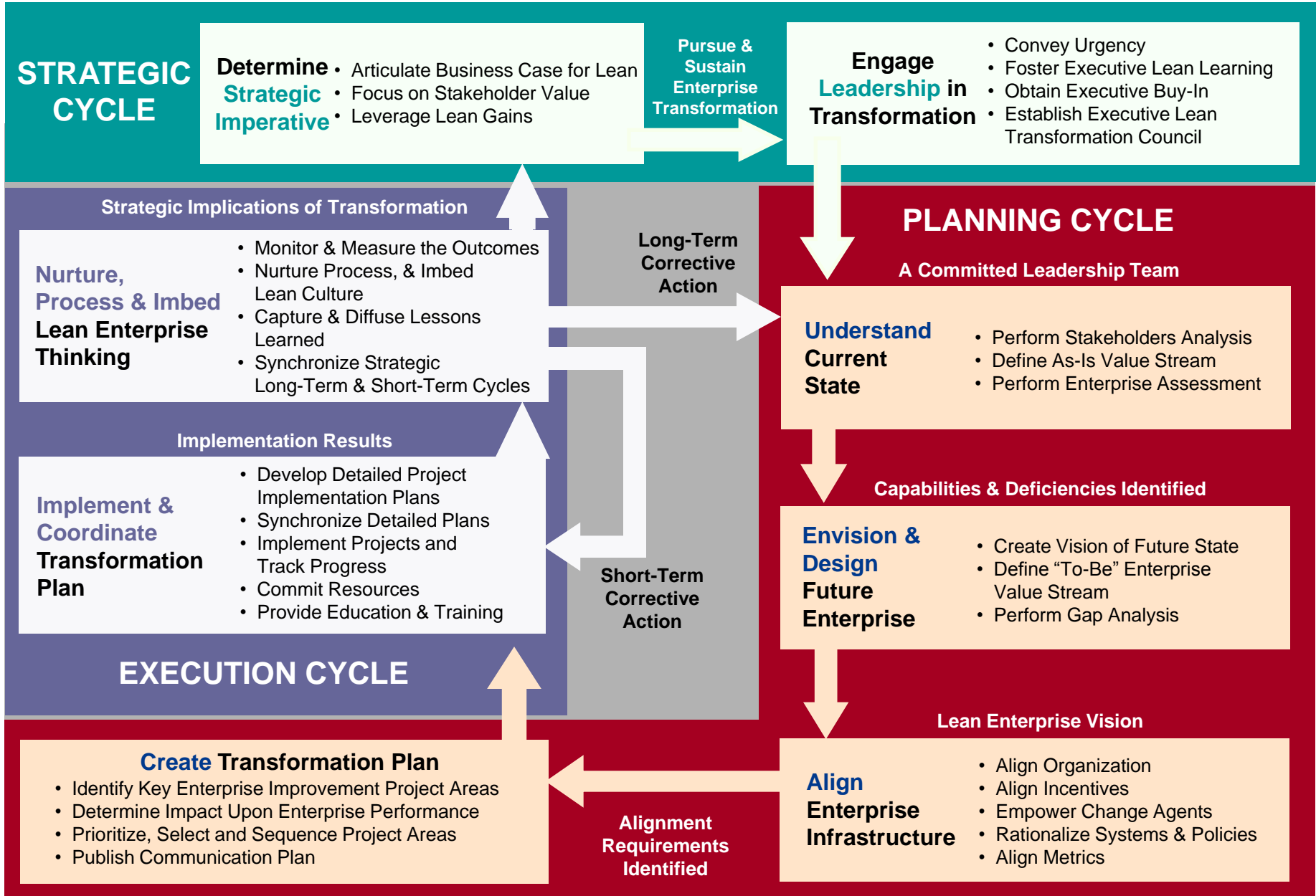
# Enterprise Strategic Analysis for Transformation for the Materiel Enterprise

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Massachusetts Institute of Technology  
April 8, 2010

- **Enterprise Strategic Analysis for Transformation (ESAT) Overview**
- **Material Enterprise (ME) ESAT**
- **System of Systems Engineering (SOSE) ESAT**
- **Reflections**

- **1993: The Lean Advancement Initiative (LAI) is a collaborative effort among industry and government organizations, MIT, and other academic institutions—originally formed to identify and implement lean principles and practices throughout the aerospace industry**
- **2000: “Transitioning to a Lean Enterprise: A Guide for Leaders”—a “roadmap” for assisting and guiding aerospace enterprises in the implementation of lean**
- **ca. 2004: ESAT method is designed to support the planning phase of the Enterprise Transformation Roadmap**
  - **The output of ESAT is a transformation plan that forms the basis for the “Execution” phase of the Roadmap**
  - **Emphasis shifts over time away from lean focus toward enterprise integration and architecting**

# LAI MIT Enterprise Transformation Roadmap



# Enterprise Strategic Analysis for Transformation

- Enterprise Commitment
- ESAT Team
- Current Enterprise Goals

1

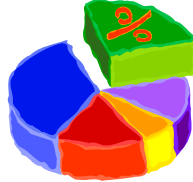


**Define the Enterprise**



- Team Charter
- Enterprise Description: Boundaries, Stakeholders, Processes

2

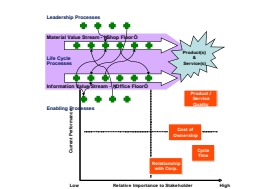


**Collect Data**

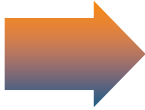


- Prioritized Stakeholder Values
- LESAT Scores
- Enterprise Resource Allocation
- Processes Data
- Current Metric Values

3



**Construct Current State Perspectives**



- Stakeholder Value Analysis
- Current State Process Map
- Process Interactions

4



**Identify Enterprise Opportunities**



- Alignment of Goals, Values, Processes, Metrics
- List of Wastes
- List of Opportunities

5

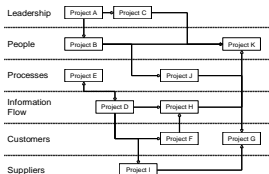


**Describe Future State Vision**



- 3 - 5-yr Goal
- Transformation Focus Areas
- Waypoint Goals

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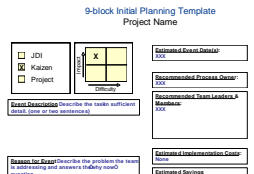


**Create Transformation Plans**



- Strategic Transformation Plan
- Governance Model
- Revised System of Metrics
- Communication Plan

7



**Create Actionable Project Descriptions**



- Project Portfolios
- Detailed Descriptions
- Recommended Metrics
- Resources Required by Project
- Project Benefits

8



**Create Deployment Plans**



- Integrated Transformation Plan

## Mission

- Perform strategic analysis of materiel enterprise
- Deliver an enterprise level transformation roadmap and the associated structure for implementation

Materiel ESAT Team Charter	
Problem Statement/ Scope	Business Impact
<p><b>Problem Characteristics/Question:</b></p> <ul style="list-style-type: none"> <li>• Strategic Environment is creating the need for institutional change within the materiel enterprise               <ul style="list-style-type: none"> <li>– ARFORGEN is the response process to adapt to the strategic environment</li> </ul> </li> <li>• The materiel enterprise must revise its processes in:               <ul style="list-style-type: none"> <li>– Requirements</li> <li>– Resources</li> <li>– Acquisition/Sustainment</li> </ul> </li> <li>• In order to best enable the Army Strategic objectives through ARFORGEN, improvement must address:               <ul style="list-style-type: none"> <li>– Time to delivery</li> <li>– Cost containment or reduction</li> <li>– Sustainment and improvement of capabilities over time</li> <li>– Flexibility and balanced priorities</li> </ul> </li> <li>• This will enable ARFORGEN while preserving the ability to accomplish other missions for the Armed Forces and the Nation</li> </ul> <p><b>Scope:</b> Materiel enterprise management processes synchronized with ARFORGEN cycles</p>	<p><b>Improved Materiel Enterprise Processes Will:</b></p> <ul style="list-style-type: none"> <li>• Deliver and sustain increased force generation capability to meet ARFORGEN requirements* on time</li> <li>• Provide transparency and visibility of accurate information to facilitate decision making at all appropriate levels</li> <li>• Minimize and control overhead costs to X%</li> <li>• Minimize and control process costs by X%</li> <li>• Reduce requirements to delivery time by X%</li> <li>• Reduce technology demo to delivery time by X%</li> <li>• Embrace the principle of continuous improvement</li> </ul> <p>*ARFORGEN requirements sequence all activities including reset, modular conversion and modernization (reference 2008 Army Posture Statement)</p>
Mission Description/ Goal	Team Members/ Workshop Schedule
<p><b>Mission Description:</b></p> <ul style="list-style-type: none"> <li>• Perform strategic analysis of materiel enterprise using the ESAT process</li> <li>• Deliver an enterprise level transformation roadmap and the associated governance structure for implementation</li> </ul> <p><b>Goal:</b> Create framework to enhance performance of the materiel enterprise and synchronize with ARFORGEN cycle for current and future forces (where performance characteristics include effectiveness, efficiency, robustness, speed and flexibility)</p>	<p>HQ AMC EDCG; ASA(ALT) PMILDEP; DA G-3; DA G-4; DA G-6; DA G-8; ARCIC; CG, ATEC; 2 PEOs; 2 LCMCs; 4 DASAs (ZS, ZR, ZP, &amp; ZT); HQ AMC G3 &amp; G8; DIR, ACC; CG, RDECOM; CG, ASC</p> <p><b>Workshop Schedule:</b> Workshop 1: 15-16 Jan Data Collection IPR: 30 Jan Workshop 2a: 23-25 Feb Workshop 2b: 10-12 Mar Workshop 3: 23-27 Mar Follow-up Reviews: Monthly Materiel Enterprise Executive Board Meetings</p>
<p><i>John A. Conder</i> HQ AMC <i>Thomas J. ...</i> DA G-4 <i>Michael ...</i> TRADOC/ARCIC <i>W. ...</i> ASC <i>David M. ...</i> DASA ZP <i>...</i> ACC <i>David ...</i> DA G-3</p>	<p><i>N. ...</i> ASA(ALT) <i>...</i> DA G-8 <i>...</i> RDECOM <i>...</i> DASA ZT <i>...</i> DASA ZR <i>...</i> DASM <i>...</i> CECOM LCMC</p>

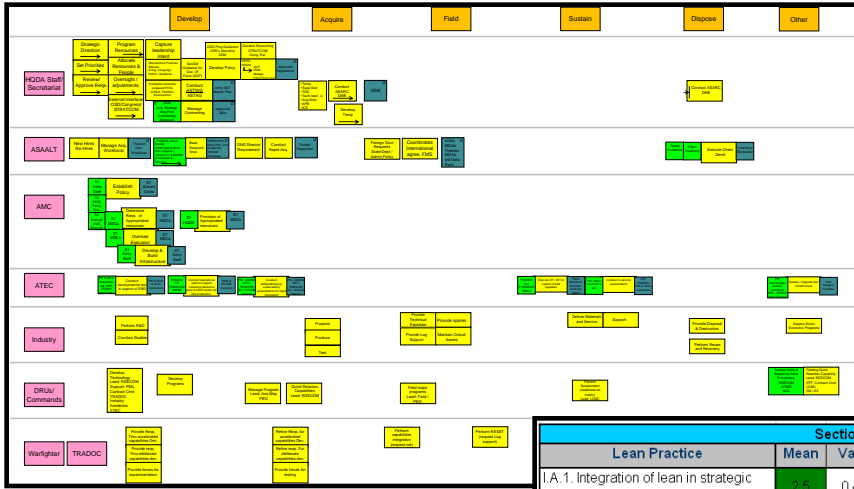
## Goal

Create a framework to enhance performance of the materiel enterprise and synchronize with ARFORGEN cycle for current and future forces (where performance characteristics include effectiveness, efficiency, robustness, speed and flexibility).



# Matériel Enterprise Senior Leaders Actively Involved in 5 Workshops





- ✓ Identify the Enterprise Core Value and Map Critical Processes
  - ✓ Analyze the Critical Processes for Waste, Opportunities and Gaps
- (Analysis Tools will Vary – depending on the Application)*

✓ Measure the Effectiveness and Lean Maturity of the Enterprise

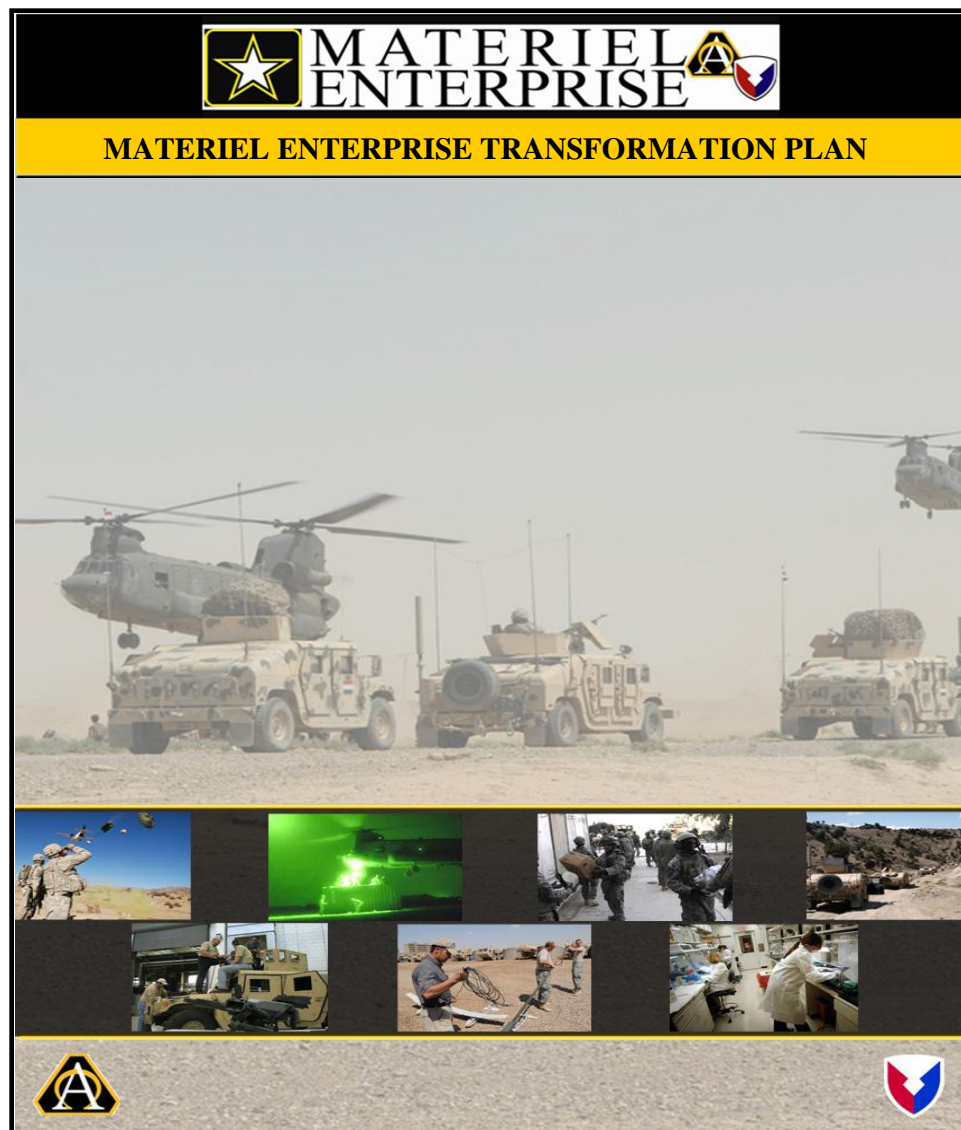
✓ Tool Utilized Focuses on  
 1) Capability Maturity  
 2) Enterprise Management and Transformation  
 3) Continuous Process Improvement

✓ X-Matrix was utilized to validate / identify gaps between Strategy, Value Delivered, Processes and Metrics

Section I - Lean Transformation / Leadership												
Lean Practice	Mean	Var.	Range	L1	L2	L3	L4	L5	D1	G1	D2	G2
IA.1. Integration of lean in strategic planning process	2.5	0.4	2.0	0	11	8	1	0	4.1	1.5	4.9	1.9
IA.2. Focus on customer value	2.1	0.7	3.0	5	9	5	1	0	3.5	1.4	4.2	2.2
IA.3. Leveraging the extended enterprise	2.4	0.6	2.0	3	7	10	0	0	3.8	1.5	4.7	2.3
IB.1. Learning and education in 'lean' for enterprise leaders	2.4	0.6	3.0	2	9	8	1	0	3.8	1.4	4.7	2.3
IB.2. Senior management commitment	1.4	0.6	3.0	14	5	0	1	0	3.4	2	4.4	3.1
IB.3. Lean Enterprise Vision	1.6	0.7	2.0	12	4	4	0	0	3.4	1.9	4.6	2.9
IB.4. A sense of urgency	1.9	0.7	3.0	7	10	2	1	0	3.5	1.7	4.8	2.9
IC.1. Understanding the current value stream	1.7	0.6	2.0	10								
IC.2. Enterprise flow	1.7	0.5	2.0	9								
IC.3. Designing the future value stream	1.2	0.3	2.0	17								
IC.4. Performance measures	1.4	0.5	2.0	15								
ID.1. Enterprise organisational orientation	2.1	0.6	3.0	4								
ID.2. Relationships based on mutual trust	1.9	0.6	2.0	7								
ID.3. Open and timely communications	2.1	0.5	3.0	3								

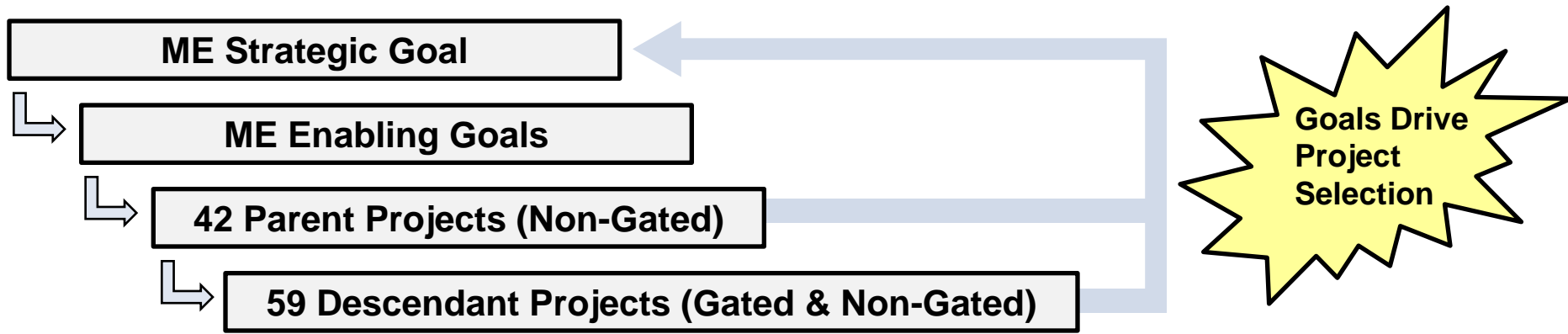
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		2 2 4 4 1 3 4 4 4 4 4 2															
8	2	10															
7	2	9															
5	4	9															
0	2	2															
6	2	8															
Reset Cycle Time	Equipment Readiness	Defense Acquisition Executive Summary (DAES)	Earned Value Management (EVM)	Contract Closeout	Order Fulfillment	Production	% AWF on glide path for CLPs	% AWF certified	% LINS fully equipped during ARFORGEN cycle	Alignment of programs with user requirement	Technology Transfer Rate	Strategic Objectives					
												Metrics					
												Stakeholder Values					
												Key Processes					



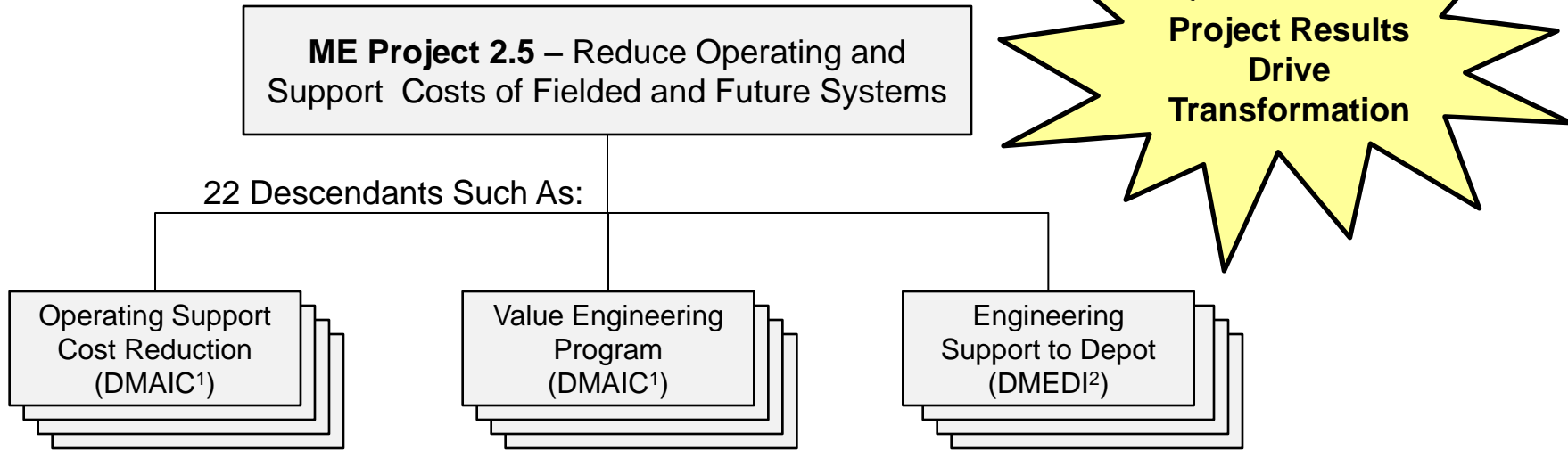


- ❖ *The Transformation Plan establishes a general vector to guide the efforts to create a collaborative association known as the Materiel Enterprise (ME)*
- ❖ *The plan provides context, direction, and specific assignments and schedules for the execution of ME Project work*
- ❖ *It contains a discrete set of ME Projects that will receive immediate emphasis and others that will be conducted as rapidly as possible*

# Execution of Materiel Enterprise Transformation Plan



## Example:

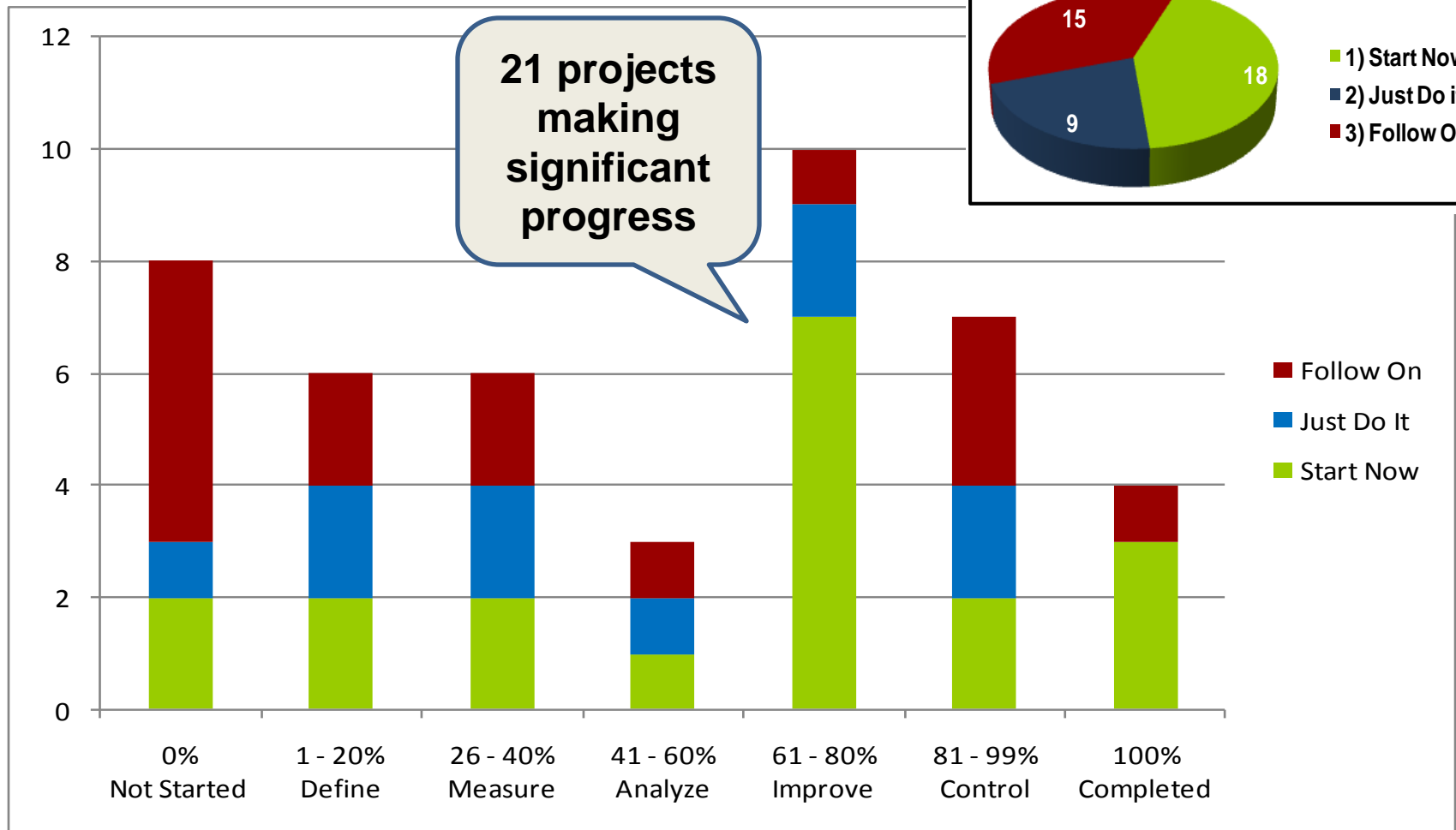
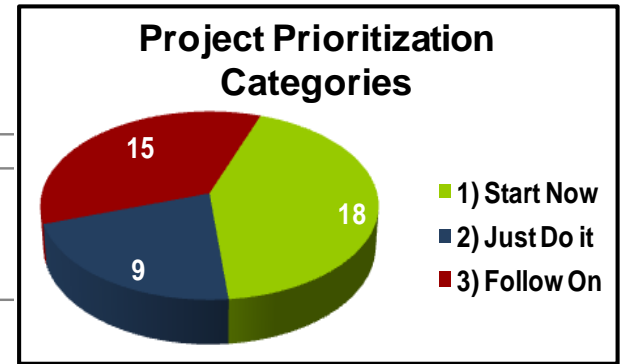


Notes:

1. Five-phased methodology for improving existing processes; Define-Measure-Analyze-Improve-Control
2. Five-phased methodology for developing new processes; Define-Measure-Explore-Develop-Implement

# Status of 42 Parent Projects

## Percent Complete



Data current as of 3 March 2010

Note: Start Now Projects are 62% Complete

# System of Systems Engineering (SOSE) ESAT

- **Objective: create SOS analysis capability at ASA(ALT) level to coordinate efforts across acquisition programs and portfolios, capability sets, unit formations, and time**
- **ESAT process included 3 workshops in DC area (20-30 participants each) from Jun to Sep 2009**
- **ESAT team: SAAL ZS (lead), SAAL ZT, G8, G6, G3/5/7, TRADOC, ATEC, PEOs (GCS, EIS, C3T, JTRS, Soldier, IEW&S, M&S, CS&CSS, STRI, AVN, BCT Mod, AMMO), AMC, RDECOM**



**Delivered SOSE Strategy, Implementation Plans in  
Mid-September**



# SOSE Goal, Vision, Mission

- Strategic Goal: Warfighters have what they need, when they need it, and it works.
- Vision: The SOSE organization leads the synchronization of Army technical efforts and enables delivery of world-class integrated materiel solutions to the Warfighter.
- Mission: Architect and enable the incremental delivery of relevant, integrated and affordable capabilities by formation type in support of the Army's guidance, modernization strategy, and Army Force Generation model.





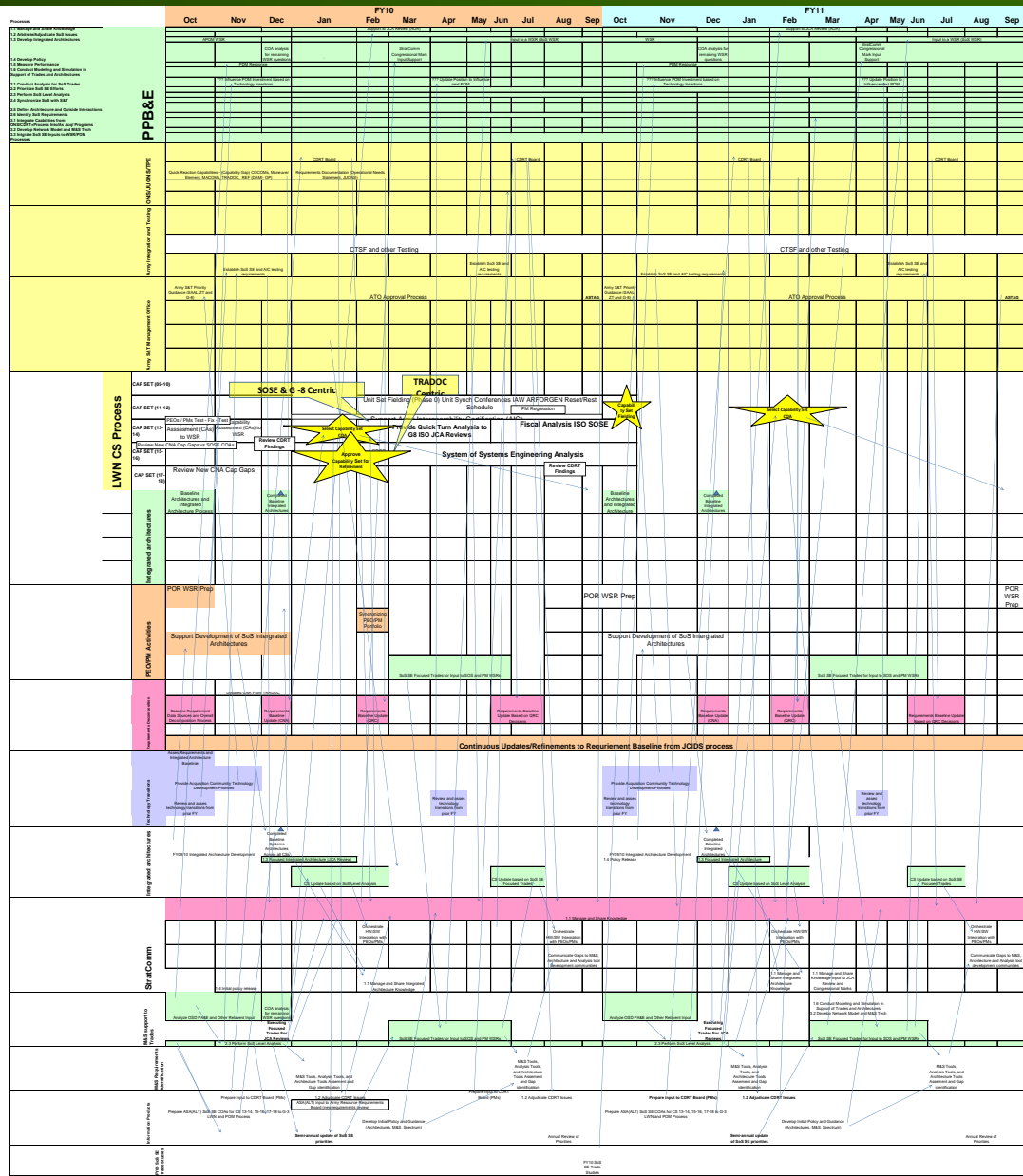
# SOS SE Strategic Objectives

- Synchronize acquisition program requirements and programmatic
- Use SOSE efficiencies to improve capabilities delivered despite fiscal constraints
- Be a recognized source for authoritative SOS acquisition decision data
- Provide authoritative SOS architectures for all Army formations
- Shape tools needed to execute SOSE mission
- Establish systems engineering enterprise standards
- Shape S&T investment strategy



# Annual Decision Cycle

- Identifies major activities over annual cycle linked to major Army processes
  - PPB&E
  - ONS/JUONS/TPE
  - Army Integration and Testing
  - Army S&T Management Office
  - LWN CS Process
  - Integrated architectures
  - PEO/PM Activities
  - Requirements Decomposition
  - Technology Transitions
  - StratComm
  - M&S support to Trades
  - M&S Requirements identification
  - Information Products
  - FY09 SoS SE Trade Studies
- Linked back to processes identified by SOSE, Acquisition Enterprise, and Larger Army working groups



# What Has Happened With SOSE Since the ESAT?

- **Leadership changes post-ESAT: new ASA(ALT), MILDEP, Dir. and Dep. Dir. SOSE**
  - Senior leadership support for SOSE is very good currently
- **Staffing SOSE is proceeding albeit more slowly than desired**
- **VCSA quick-response SOS studies currently underway**
  - “Flex the muscles” and exercise the relationships needed for on-going analysis
  - Demonstrate the value of SOS analysis to stakeholders
- **Key stakeholders moving from “wait and see” to support as they become engaged**
- **Task ahead: continue to draw upon ESAT insights, exercise the processes, refine, and formalize**
  - Build upon growing SOS *enterprise identity* produced by the ESAT workshops

# Key Outcomes of the ESAT Process

- **Shared mental model for senior leadership group to both integrate (bridge the major seams) and make the enterprise more effective**
  - Improved lateral relationships
- **Jointly-developed artifacts to assist transformation efforts**
  - Enterprise improvement project descriptions
  - Enterprise metrics
  - Communication plan and media
- **Analysis artifacts provide record of decision rationale to help disseminate vision and plan**

# Reflecting on the Experiences with the ME and SOSE ESATs

- **Sustaining senior leadership involvement and interest critical to signaling urgency of transformation to the entire enterprise**
- **Creating shared artifacts brought diverse groups together around common objectives**
- **Under diverse circumstances, the ESAT process adapted to bring together stakeholders with fairly different perspectives to develop a common vision, purpose, and roadmap for way ahead**
- **Both efforts stretched the ESAT process/toolset**
  - **ME ESAT involved existing enterprises in newly-defined formal relationships—a very large and complex enterprise**
  - **SOSE involved creation of a new function and organization (with few precedents), introduced elements of enterprise architecting**
- **LSS/CPI tools were necessary but not sufficient for enterprise-level redesign challenges**
  - **MBBs with experience working enterprise-level projects were key enablers to help the team through the complexity of the analysis—underestimate social aspects of enterprise change at your own peril**



# ESAT Process as Enterprise Analysis

- **Trading rigor and fidelity of the enterprise characterization...**
  - **Versus scope—including multiple stakeholder perspectives**
  - **Versus consensus of the enterprise group**
  - **Probably does not reveal complex dynamic interactions**
  - **Good enough to define improvement projects?**
    - **Projects may employ more extensive/rigorous analysis, including dynamic interactions**
- **Senior leader time in workshops vs. analytic team time?**
- **How to capture the clarity of vision (“ah ha” moment) experienced by the (relatively) small group of leaders to disseminate across the entire enterprise?**
  - **Are projects, policies, etc. sufficient?**
- **Context has a big impact on priority of process and follow-on—common to any making any analytic intervention stick**
  - **e.g., Army fighting 2 wars, \$25B acquisition budget cut...**