Transforming USCG Logistics

A systems engineering approach to transforming the USCG Enterprise Logistics Systems

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Agenda

• USCG Logistics Transformation Background
• Enterprise Transformation Basics
• USCG Logistics Transformation
• Demos of Logistics Models and Transition Dashboards
Logistics Transformation Background

- USCG has several “stovepiped” logistics business models (surface, air, shore, IT)
- Models have evolved over time and are not integrated or strategically aligned
- Some of the various models utilize modern logistics concepts, others do not
- Limited visibility into systems performance
- Limited ability to manage costs and effectiveness
- *Then along comes the Deepwater program, the CFO Act, and Katrina...*
Logistics Transformation Drivers

- **Deepwater program** – recapitalization of USCG assets and capabilities
  - Deepwater program has experienced several issues that have led to a major restructuring of the program.

- **CFO Act** – Mandate to institute total asset visibility and financial controls

- **Success of Katrina disaster response** – demonstrated strengths of USCG Aviation logistics model
Logistics Transformation Objectives/Scope

- **Admiral Allen issues CIAO #4**
- Bi-level maintenance w/more standardized procedures.
- Centralized supply chain management w/spending driven by maintenance requirements.
- *Disciplined/standard Coast Guard-wide engineering and logistics business processes, modeled after our internal best practices currently in use in aviation.*
- Strong configuration management processes, w/associated compliance inspections, to ensure all configurations are safe, effective, and supportable when installed.
- Reduce the number of financial and information systems.
Transformation Support Team

- Logistics Transformation Program Integration Office (LTPIO) established
- General Dynamics contracted to provide program management
- VectorCSP contracted to support organizational and logistics transformation
• LTPIO chose VectorCSP’s Pathfinder approach to develop the logistics business model

• Pathfinder is a systems-oriented, tools-based transformation management methodology

• Pathfinder incorporates a complete business systems performance model, with an emphasis on behavioral engineering
Let’s go back to Org Transformation Basics!

Start Here

Finish!
Enterprise Transformation ABCs

A: Where you are now.

B: Where you want to be.

C: The path from A to B.
A: Where you are now.

- In order to get from A to B, you have to understand A.
- A is your “As-Is” organizational and business model
- A is usually very, very complex...

Usually the important cultural and political aspects of a business model are not well documented.
B: Where you want to be.

- In order to get from A to B, you also have to understand B.
- B is your “To-Be” organizational and business model
- B is usually not well defined…
C: The Path from A to B

The really, really hard part.

Question:
What are the roadblocks along this path?
Speedbumps on the Path

- Strategic Alignment
- Technology
- Process
- Organizational Design
- Culture
- Politics

Question: Of these roadblocks, which is most difficult to overcome?
To sum it up…

You move from a highly complex (and usually broken) system…

…through a complex transformation process fraught with cultural, technical, and political barriers…

…to get to what is usually a poorly understood end state.

Question: What percentage of enterprise transformations succeed?
It’s no wonder that 85% of all enterprise transformations do not fully succeed!
What you need to succeed

1. Clearly defined transformation objectives
2. A way to identify A and B
3. A roadmap to transform the structures, processes, technology, culture and politics of the organization
4. A way to manage the astounding complexity and mountains of data of such a large-scale endeavor
5. A way to communicate with all stakeholders
6. A way to measure success of the transformation
7. A fully-dedicated transformation management team
In other words...

...you need a systems engineering approach!
The Coast Guard Logistics Transformation

Start Here

Finish!
Coast Guard Transformation

A: Separate logistics models for surface and aviation.

B: Standard logistics model based on aviation model.

C: Logistics Transformation.

Path from A to B

A: Current State

B: Desired State
A: The “As-Is” State of CG Logistics

- Multiple logistics models (naval, aviation, shore, C4I SR)
- Problematic logistics systems for naval, shore, and technology systems
  - Non-standard fleet assets and inventories
  - Antiquated logistics processes and technology
  - Sub-optimal acquisition model
  - Poor financial controls
- Not compliant with CFO Act
- Problems with Deepwater program
- Getting the mission accomplished despite sub-optimal logistics systems due to dedication and “can-do” attitude
B: The “To-Be” State of CG Logistics

- Adopt CG Aviation Integrated Logistics Systems (ILS) model
- Standard fleet assets and Total Asset Visibility
- Integrated technology infrastructure (based on modified ALMIS)
- Transparent and tightly controlled financials
- CFO Act Compliance
- Systems measures of effectiveness (MOEs)
C: The Path to Transition

- Commandant’s CIAO establishes transformation objectives
- LTPIO established as the fully-dedicated transition team
- Pathfinder Performance Modeling approach chosen by LTPIO as a key transformation management tool.
About Pathfinder

• Pathfinder is a dedicated **transformation modeling** and support system

• Designed for **large-scale** organizational transformations

• Pathfinder is based upon a **systems engineering** approach to org transformation
Performance System Engineering

- Pathfinder breaks organizational performance into discrete systems elements

- It incorporates **process engineering**, **organizational design**, **enterprise architecture**, and most importantly **behavioral engineering**

- It enables modeling of all elements that **influence** organizational performance

- It makes it possible to manage the complexity of a large transformation
Performance Systems Components

• Key building blocks of a Performance Model

- System
- System Outcome
- Job Role or Team (People)
- Strategic Objective
- Policy
- Technology
- Organization

Question: Which of these elements is most critical to performance, yet most often overlooked?
A performance system can have multiple subsystems.

A performance system is defined by its System Outcomes.

The Outcome is the central element of a performance model.
Examples of Systems and Outcomes

• The Coast Guard logistics performance model is based on the standard ILS (Integrated Logistics System)

• Excerpt from the CG model:

  ILS
  ├── Maintenance
  │   └── Cost driver components identified
  │       ├── Part enrolled in ALMIS
  │       └── Level of Repair determination
  │           └── Many others...
### Coast Guard ILS System Hierarchy

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All components of the model are related to Outcomes

- What job roles are involved in producing the outcome?
- What policies are related to the outcome?
- What strategic objectives does the outcome support?
- What organizations are involved in producing the outcome?
- What technology is involved in producing the outcome?
- What systems are related to the outcome?
• This “performance modeling” approach is used to create as-is (A) and to-be (B) models of CG logistics.

The next step is to develop the Logistics Transformation Model (C).

As-I's Model

To-Be Model

C: Transformation Model
Outcomes as Key Transformation Drivers

• In the Pathfinder transformation model, system outcomes are the key transformation drivers.

• In other words, if the “to-be” outcome can be achieved, then the transformation to that part of the system is considered a success.
Eliminating Outcome Performance Gaps

- There are typically gaps between an as-is outcome and the to-be outcome.
- These gaps are recognized in our model as a performance gap element.
- Some gaps are simply differences in processes or personnel.
- Other gaps may require technology, infrastructure, or organizational changes to eliminate.
- These gaps must be eliminated by actions called performance interventions.
• Pathfinder includes **gaps** and **interventions** as discrete elements of the transformation model.
Coast Guard Intervention Examples

- **Outcome:** Approved Maintenance Procedure Card produced IAW COMDI NST xxx.x
  
  - **Gap:** Maintenance Requirements List (MRL) not defined for surface assets
    
    - Intervention: Perform MSG-3 logic analysis
    - Intervention: Enroll asset in ACMS
    - Intervention: Modify MPC process guide
    - Intervention: Identify and train MPC production staff
About Interventions

- Each intervention:
  - Is an actionable item
  - Has an accountable owner
  - Has schedule constraints
  - Has associated resources
  - Can be used to build a transition project plan
  - And most importantly, has measurable success criteria
Putting the elements together...

- Strategies
- Systems
- Subsystems
- Outcomes
- Influencers (policies, organizations, people, technology, etc.)
- Gaps
- Interventions
- How does it all fit together?
Transformation Model Framework

Strategic Framework
- Vision/Mission
- Strategic Goal
- Statute
- Policy
- Best Practice
- Documentation

Systems Framework
- System
- Sub-System
- Outcome
- Requirement

Org Framework
- Org Unit
- Performer:
  - Job Role
  - Team
  - Automated System

Technology Framework
- IT System
- IT Feature
- Facility/Equipment
- Facility
- Tool/Equipment

Transition Framework
- Transformation Goal
- Performance Gap
- Transformation Objective
- Intervention
- Transition Success Criteria
The USCG Transition Process

- LTPIO alignment conducted, **transformation objectives identified**
- Docs and resources reviewed
- SMEs identified
- **ILS systems outcome-based framework developed**
  - Best practices identified by SMEs (42)
  - Preliminary outcomes identified by SMEs (800)
- Org and strategic models defined
- **Key outcomes identified (250)**
  - Framework relationships to key outcomes identified by SMEs (docs, job roles, policies, best practices, etc.)
  - Skilled Performers (SPs) identified by USCG
- SP outcome review worksheets prepared
- SP outcomes reviews and validation conducted
- All data collected in Pathfinder Performance Modeler
- All data reviewed
- Analysis reports prepared
- PVs and PIs developed using facilitated meetings with LTPIO working groups
- Activity crosswalks prepared
- **Project plans and transition dashboards developed**
- Transition training prepared and delivered
Aviation Logistics Framework Scale

- 800 aviation logistics model outcomes were identified in all 10 ILS elements (and a cross-cutting set of subelements)
- 250 Key Outcomes (transformation drivers) identified
- Key Outcomes mapped to:
  - 41 Systems
  - 698 Job roles, teams, or org units
  - 80 Documents (Policy/Directives/Statutes, etc)
  - 122 IT systems and features
  - 84 Strategic elements (goals and objectives)
  - Over 600 functional and business requirements
  - Over 7,000 performance factors and influencers
- Nearly 22,000 performance relationships
Model Configuration Management

Aviation Logistics WPM Configuration Management

1. User Review
   Using the WPM web page, user review jobs, orgs, processes, etc.

2. Feedback
   User notes change to process, org unit, job role, IT systems, etc. via feedback form located on each page of LPMS.

3. Review
   LTHO evaluates feasibility of proposed change. If feasible and substantive, forward to CG-22 process.

4. CCB
   WPM change reviewed and approved via CCB and CG-22.

5. Change
   The WPM administrator makes the CCB-approved change to the WPM.

6. Update
   The WPM database is updated.

This is a high-level overview of the proposed Aviation Logistics WPM configuration management process which can be used both to validate and enhance WPM content and also to manage its configuration over time.
People are Key

• Changing the behavior of your people is the most difficult task of all...

• Culture and politics are the most difficult roadblocks to logistics transformation

• You’ve got to convince people at all levels to change the way they operate.
Promoting cultural and political change

- Each outcome identifies human factors influencers (technological, environmental, social, and process)
- Relationships in model indicate cultural and political power bases
- Model enables stakeholders to “see” vision
- The **Transformation Dashboard** is key to producing measurable changes in organization, infrastructure, processes, systems, and behavior.
- Manages and measures progress in making the changes required to achieve “to-be” outcomes
Transition Success Criteria

Each level includes a summary scorecard that shows transition progress.

To-Be System Outcome

Performance Gap

Performance Intervention

- Green: External audit conducted - Final Operating Capability (FOC) achieved
- Yellow: Internal audit conducted - Initial Operating Capability (IOC) achieved
- Orange: Process requirements identified and plan of action in place
- Red: No Progress
Example Success Criteria

- **Outcome:** Authorized Chemical List
  - **Intervention:** Chemical Locker Storage Established
  - **Criteria:**
    - **Red:** No Progress
    - **Orange:** Location for chemical storage locker identified.
    - **Yellow:** Authorized Chemical List established and utilization instruction developed and signed by Sector Engineering Officer.
    - **Green:** Personnel trained in proper storage procedures and usage of the Chemical locker IAW Hazmat plan.
    - **Owner, schedule criteria, compliance inspection process, etc. defined for intervention in model**
### Maintenance Scorecard

This scorecard measures the aggregate scores of all standard boat transition activities within this ILS element. When this score turns green, it indicates that all the subordinate scores are also green and that this boat class has met all transition objectives for this ILS element.

This scorecard is a rollup summary of the following scores:

<table>
<thead>
<tr>
<th>Orange Criteria</th>
<th>Yellow Criteria</th>
<th>Green Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2813 Asset enrolled in ACMS</strong></td>
<td>Review Outcome processes in WFM, identify requirements for achieving the outcome, and put plan in place.</td>
<td>Internal leadership verifies enrollment form is filled out for installed and spare components. Data entry and initial asset enrollment complete.</td>
</tr>
<tr>
<td><strong>2833 Accurate, standard MPC graphics</strong></td>
<td>Review Outcome processes in WFM, identify requirements for achieving the outcome, and put plan in place.</td>
<td>Graphic submitted to APC Graphics Department for Tech Illustrator vectorization. Completed graphic hyperlinked to MPC. Internal audit of MPC completed.</td>
</tr>
<tr>
<td><strong>4255 Mandatory Special Requirements (MSR) List</strong></td>
<td>Review Outcome processes in WFM, identify requirements for achieving the outcome, and put plan in place.</td>
<td>Internal leadership verifies that ACMS task codes are assigned to MSR items. Completed MSR List enrolled in ACMS.</td>
</tr>
</tbody>
</table>
Summary

- Performance Model Framework identifies all elements of logistics system performance
- All relationships between systems elements are defined
- Performance outcomes are central to model
- Each outcome has transition plan that identifies gaps and interventions
- Each intervention has measurable success criteria
- Success criteria form the basis for the Transition Dashboard
- Transition Dashboard drives systems, organizational, technological, and behavioral change
Demos and Questions

• USCG Logistics Performance Management System (LPMS)
• Logistics Transition Dashboard
• Transformation support materials