Supply Chain Council Awards for Excellence in Supply Chain Operational Excellence

U.S. AIR FORCE

Ogden Air Logistics Center

Space and C3I Supply Chain Management Team

Purchasing and Supply Chain Management Initiatives

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EXECUTIVE SUMMARY

This document contains the Ogden Air Logistics Center submission for the 2003 Supply Chain Council Awards for Operational Excellence. This submission describes the results of an integrated set of Purchasing and Supply Chain Management (PSCM) initiatives developed and executed by our Space and Command, Control, Communications, and Intelligence (C3I) Directorate.

The PSCM transformation is a major Air Force initiative to improve and integrate the Air Force Materiel Command's (AFMC's) purchasing and supply processes. The goal of this initiative is to increase the availability of parts to the warfighter, improve product quality and delivery, and reduce AFMC's cost of doing business. The PSCM transformation will eliminate waste, streamline processes, and integrate purchasing and supply chain responsibilities. While it is estimated to take several years to fully implement all elements of this piece of the overall sustainment transformation, the Air Force is fully committed to establishing PSCM as a new core capability to meet the needs of Air Force 21st Century Air and Space Expeditionary Forces.

Our Space and C3I Directorate has leaned forward with the implementation of **Advanced Planning and Scheduling System (APS), Performance Based Logistics (PBL), Demand Planning**, and **Strategic Sourcing** pathfinders, four key components of PSCM. Our objectives are to test concepts such as Demand Planning, Strategic Sourcing, and PBL, and tools such as APS, in the Air Force's non-fly world, feeding our results back to HQ AFMC and the Air Staff to ensure a seamless PSCM transition for both the flying and non-flying Air Force sustainment communities. A unique feature of each of our PSCM initiatives is the direct collaboration we have within the DoD community. For three of these initiatives, APS, PBL, and Demand Planning, we teamed with the Tobyhanna Army Depot and the Defense Logistics Agency (DLA). Our collaborative efforts include the installation of an Air Force data system at Tobyhanna that collects parts consumption data and shop flow times, the establishment of Industrial Prime Vendor (IPV) to support our PBL initiative, and the cleansing of Bills of Material (BOMs) to improve our parts forecasting capability. The Naval Surface Warfare Center at Crane, IN, is our partner on our vacuum electronic device (VED) strategic sourcing initiative. As the Executive Agent, Crane assisted us in gathering market intelligence and identifying varying levels of repair options for VEDs. We, the Army, Navy, DLA, and associated representatives from industry shared lessons learned from the deployment of systems such as the Army's Logistics Modernization (LOGMOD) at Tobyhanna, DLA's deployment of Business Systems Modernization (BSM), and IPV, which we helped install at Tobyhanna in support of our Ground Theater Air Control System (GTACS) repair program.

Our aggressive **Diminishing Manufacturing Sources and Material Shortages (DMSMS)** program is complimenting these pathfinders and will continue under

the PSCM umbrella. Our DMSMS program was featured as a DoD-model program at the FY03 DoD DMSMS Symposium in San Diego, CA.

The results of our forward-leaning PSCM activity has been improved delivery performance at lower costs of goods sold for our warfighting customers. The details of each of our initiatives you will find in our submission, as well as a quantification of our results to date.

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SECTION 1: GENERAL INFORMATION AND PROJECT COMPLEXITY

1) Name of the submitting organization

Air Force
Headquarters Air Force Materiel Command
Ogden Air Logistics Center

2) Name of the responding organizational unit

Space and C3I Directorate
Space and C3I Supply Chain Management Team

3) Brief mission description of the overall business objectives, product lines, and mission of the organization

With PSCM, the Air Force Materiel Command (AFMC) embarked upon its most significant change in sustainment support to our warfighting customers. When fully implemented, PSCM will integrate our purchasing and supply processes into a single end-to-end process that spans the Air Force supply system, reducing supply chain operating costs and improving warfighter readiness.

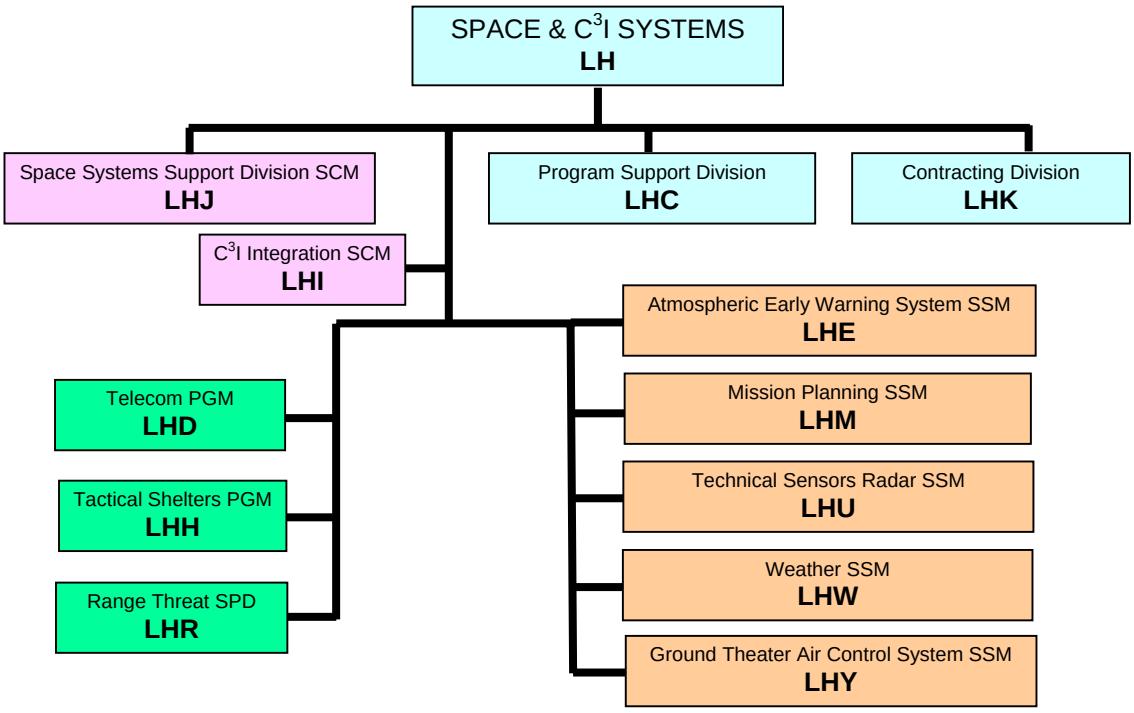
The Space and C3I supply chain management team at Ogden Air Logistics Center (OO-ALC) has pathfinders in work to accomplish the following business objectives:

- Reduce end-to-end cycle time for buy and repair items
- Improve supply order fulfillment to our customers
- Simplify our business processes
- Reduce total supply chain costs
- Increase Space and C3I system availability
- Increase inter-service collaboration

The product lines for the Space and C3I Directorate include the following:

- Space systems such as Global Positioning System and Cheyenne Mountain Complex
- Ground Theater Air Control System
- Weather systems
- Air Force test range threat systems such as the Tactical Radar Threat Generator
- Atmospheric Early Warning System
- Telecommunication equipment including cockpit voice recorders, telephones, modems, fiber optic components
- Tactical shelters

The following is the organizational structure for the Space and C3I Directorate:



The mission of the Space and C3I Directorate is to provide our customers and warfighters with premier sustainment and acquisition support for space and C3I systems. The goals of our organization are to:

- Exceed our warfighter customer expectations
- Create and maintain an effective and efficient organization
- Create an environment that promotes both the personal and professional development of our people

4) Category of Submission

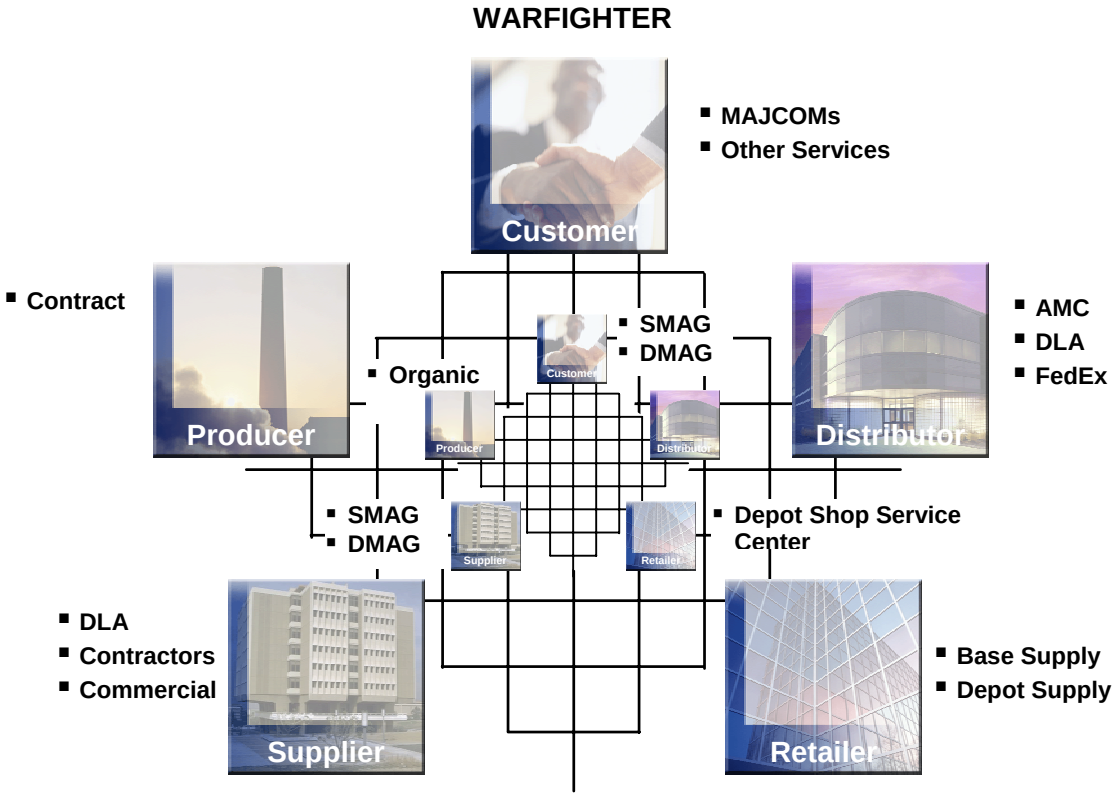
Supply Chain Operational Excellence Award

5) Description of the Supply Chain and Alignment with SCOR Processes

The Space and C3I supply chain is an integrated set of business processes that support the flow of products, information, and money from the point of origin to the point of use. Our warfighting customers are from every major command in the Air Force, as well as other services. Approximately 50 percent of our items are repaired organically, with Tobyhanna Army Depot serving as our primary source of repair. The remaining 50 percent is repaired in the private sector. Our funds to procure new and repair unserviceable items flow into and out of our Supply Management Activity Group (SMAG) and Depot Maintenance Activity

Group (DMAG) working capital funds. The SMAG and DMAG working capital funds establish our rates and prices prior to the year of execution and are operated with a break-even philosophy. We rely on Headquarters Air Mobility Command (AMC), the Defense Logistics Agency (DLA), and commercial carriers such as Federal Express for the distribution of products to our customers. Our products are shipped literally all over the world, supporting locations such as test ranges, remote radar sites, and command posts.

The Space and C3I SCMs manage approximately 22,000 national stock numbers (NSNs), which is approximately one-third of OO-ALC's total population. Approximately 55% of these NSNs are electronic components which have short support cycles and diminishing manufacturing source problems that worsen daily. Our annual spend plan is approximately $500 million, spread across approximately 200 contract sources.



The Space and C3I SCM initiatives touch on all five of the Supply Chain Operational Reference (SCOR) model process as detailed in the following table:

INITIATIVE/ OBJECTIVES	**DESCRIPTION**	**SCOR PROCESS AREA(S)**
1. Demand Planning to reduce flow time of assets in TYAD shops.	The MILSTAR High Speed printer repair at TYAD was racked with problems and could not meet the customer demand for these critical items. Problems such as cannibalization, parts obsolescence, shop floor parts routing and requirements forecasting were delaying production of the printers and subsequent deliveries to the field. The demand planning process was selected to address the problem and bring our multi service partners under one set of requirements that could be validated and verified.	Plan Source Make Deliver Return
2. Strategic Sourcing to solidify industrial base, share long-term supportability risk, and apply logic to low demand vacuum electronic devices	The business of Supply Chain Management for Space and C3I programs is at best difficult for low volume, low density systems and realizing economy of scale for establishing our support contracts is always an issue. Strategic Sourcing for items like TWTs and VEDs was the only alternative to multiple small contracts sourced out to several vendors. Our efforts cross multiple Air Logistic Centers and to the Navy for source of repair.	Plan Source Make Deliver Return
3. Advanced Planning and Scheduling (APS) system to provide an automated, alerts-based capability to identify, examine, and resolve potential SCM issues by exception before they impact daily execution	The Tactical Radar Threat Generator (TRTG) Pathfinder will evaluate APS capabilities within this AF supply chain environment and provide information that will be used and applied towards an implementation decision by AF leadership. A unique feature to this pathfinder is the collaboration between the Air Force (OO-ALC) and Army (Tobyhanna Army Depot). Tobyhanna is the repair source for the TRTG, and their personnel will be feeding consumption and shop flow information into APS. The three modules within the APS system that will be implemented during this Pathfinder are: (1) Demand Planning Module (forecasting, planning and management) (2) Supply Planning Module (procurement, inventory, distribution, capacity planning, scheduling) (3) Collaboration Module (collaborative planning, monitoring and measurement)	Deliver Return
4. PBL to improve equipment availability by reducing equipment wait time	PBL was selected to improve equipment availability by reducing wait times. The facilitators are effective supply chain management, enhanced material support, and improved configuration control for the Ground Theater Air Control System (GTACS) TPS-75 Radar System. Secondary goals were to establish Automated Identification Tracking (AIT) tracking of component parts and linking Air Force systems with the Army's Logistics Modernization Program (LMP) at Tobyhanna Army depot.	Plan Source Make Deliver Return
5. DMSMS to address the obsolescence issues with space components	The DMSMS team was established because of the great number of obsolescence issues across all of the Space and C3I programs. Aging systems, some over 30 years old, were driving a multitude of support problems. The contractor team from Northrop Grumman Information Technology has made it possible to narrow our focus and, through the use of the AVCOM database, we are able to forecast with great accuracy the obsolete components down to the piece part on any given item that we manage.	Source Make Deliver

6) Supply Chain External Partner Organizations

Below are our Air Force external partners, with the number of personnel involved in parenthesis:

- Office of Secretary of Defense (OSD)(1)
- Defense Logistics Agency (DLA)(3)
- Bearing Point Consulting (7)
- Defense Logistics Agency (DLA) (7)
- Science Application International Corporation (1)
- Dynamics Research Corporation (DRC) (3)
- Pratt & Whitney (P&W) (4)
- Small Business Administration (SBA) (2)
- Defense Contract Management Agency (DCMA) (3)
- Defense Finance and Accounting Service (DFAS) (1)
- Tobyhanna Army Depot (TYAD) (3)

7) Internal Partners and Organizations

Below are our Air Force internal partners, with the number of personnel involved in parenthesis:

- SAF/AQC (2)
- HQ USAF/IL-I (4)
- HQ AFMC/LG (5)
- OO-ALC/LG (1)
- OC-ALC/CD (4)
- WR-ALC/CD (4)
- Logistics Management Directorate (16)
- Information Technology Directorate (3)
- Maintenance Directorate (10)
- Acquisition Center of Excellence (2)
- Comptroller Directorate (2)
- Maintenance Material Support Division (10)
- Command Headquarters Points of Contact (8)
- Command Logistics Liaison Officers (5)
- Command Wing Points of Contact (6)

8) POC Information for Each Supply Chain Partner

Industry

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DoD

Mr. Lou Kratz, Assistant Deputy Secretary of Defense, Logistics Plans and Programs, OUSD/LPP, 3500 Defense Pentagon, Room 2C264, Washington DC 20301-3500, Com: (703) 614-6082

SECTION 2: IMPLEMENTATION

1) Explain why the supply chain initiative was undertaken and how it was selected

HQ AFMC has formal PSCM pathfinder programs at each of the three Air Logistics Centers. The F100 engine program was selected at Oklahoma Air Logistics Center (OC-ALC), the C-130 aircraft program was selected at Warner Robins Air Logistics Center (WR-ALC), and landing gear and auxiliary power units were selected at OO-ALC. The Space and C3I SCM team expressed its desire to participate as an additional pathfinder to ensure the unique features of the Air Force's non-flying sustainment communities were captured and factored into the formal rollout of PSCM.

The Space and C3I supply chain is unique as compared to the flying community in the following ways:

- High (98%+) required availability of end items
- Low volume and low density of spare parts
- Aging but critical national assets

To fully engage with each of the major components of PSCM, the Space and C3I SCMs collaborated in undertaking pathfinders in the following areas:

Demand Planning

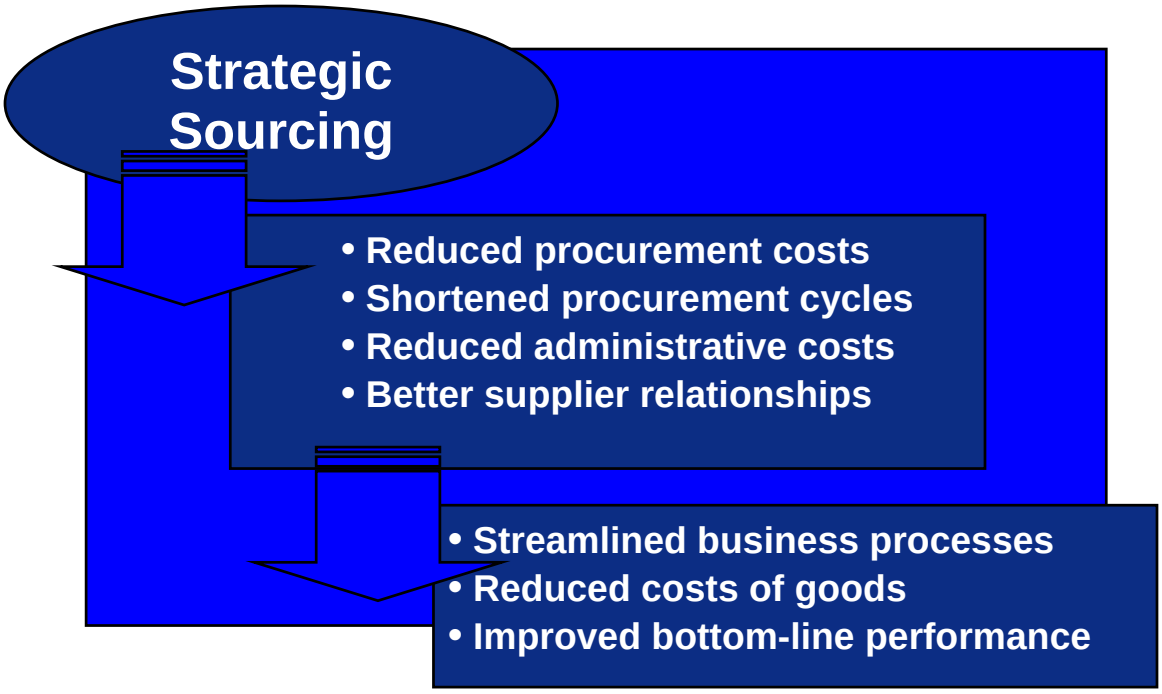
The Space and C3I Demand Planning initiative was undertaken to resolve logistics support issues and reduce repair process flow days for the Military Strategic Tactical Relay (MILSTAR) High Speed Printer (HSP). The printer averaged 66 flow days at Tobyhanna Army Depot prior to the start of pathfinder, and the program was plagued by piece part shortages that delayed the repair process and subsequent deliveries to Air Force warfighting customers. The organizations involved in this pathfinder include the Ogden Air Logistics Center (OO-ALC), Tobyhanna Army Depot (TYAD) and the Defense Logistics Agency (DLA). The project was initiated in January 2003.

Demand Planning is the process of translating the warfighter's logistics support requirements into executable logistics plans and schedules. In essence, Demand Planning prepares the logistics system to respond with the right part, the right repair, at the right place, at the right time and for the right cost. This emphasis on an accurate and responsive planning process is a prerequisite for a 21st century logistics system based on pipeline velocity, lean inventory levels and repair on demand. Plainly, without a robust Demand Planning capability, the Air Force will not be able to meet the support requirements of an expeditionary Warfighter.

The quality and accuracy of Demand Planning is impacted by a number of factors, including normal variability in the customer's requirement for goods and services, forecast accuracy, and the ability to integrate supply, inventory, capacity, and financial factors within a single framework. Effects from poor Demand Planning surface in a number of areas; for instance, poor repair planning often results in cannibalizations, shipment expediting, and schedule changes to compensate for stock outages and backorders. Negative results can also be seen in terms of inventory management (too much/too little stock), pipeline velocity (poor use of capacity), total costs and customer satisfaction.

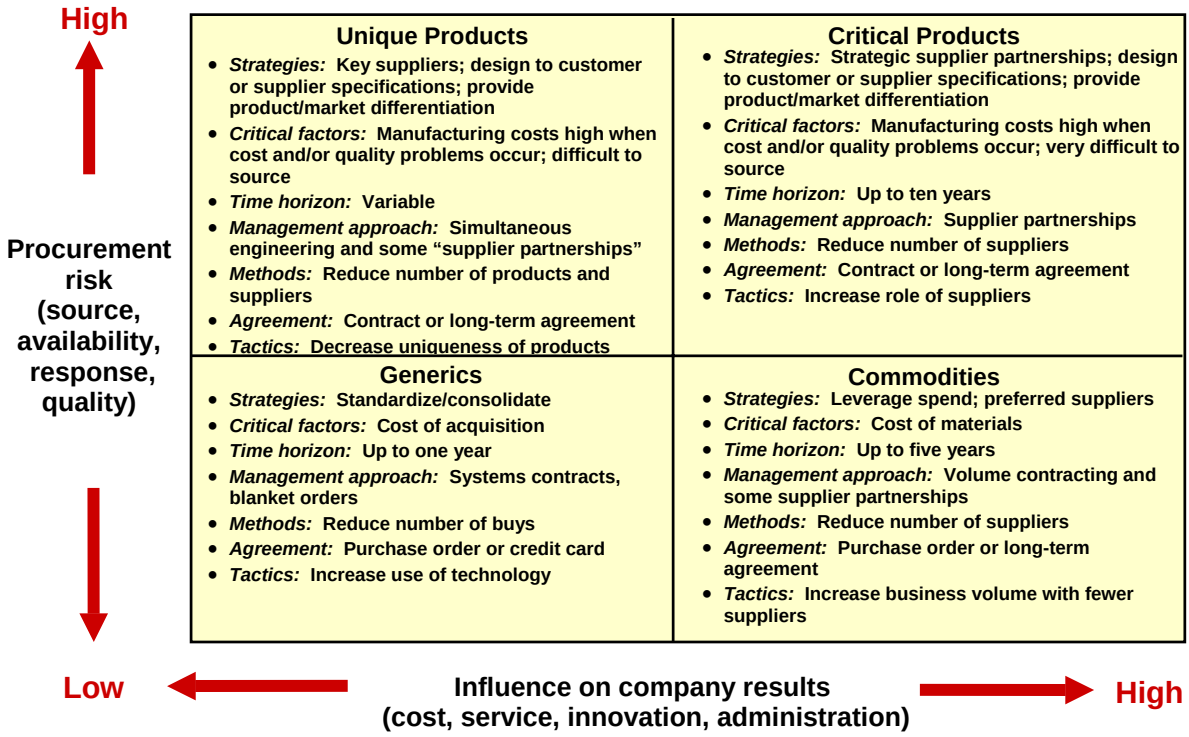
Strategic Sourcing

The "P" (Purchasing) in PSCM focuses on the mechanism for sourcing goods and services, taking a more strategic approach to purchasing. Larger, longer-term, continuous improvement relationships with the best suppliers is one of the goals of PSCM. The objectives of strategic sourcing are many, most of which are identified below:



Vacuum Electron Devises (VEDs) are a commodity group that includes Traveling Wave Tubes (TWTs). Historically, this commodity has been difficult to support throughout the DoD, and in the Space and C3I Systems Directorate this difficulty has been magnified by the unique circumstances faced by this community (98%+ System Availability, Low Volume/Low Density Systems, etc.).

In 2002, the Space and C3I Systems Directorate experienced high MICAP hours on specific TWT NSNs. Analyzing organizational needs, VEDs fall into the "Critical Products" quadrant (quad chart below). Therefore, this organization must differentiate how VEDs are managed from other components.



Through the Spares Campaign and educational briefings building up to Purchasing and Supply Chain Management, the Space and C3I SCMs realized the benefits of strategic sourcing and, in fiscal year 2003 directed TWTs be evaluated as a potential strategic sourcing candidate.

HQ AFMC set an expectation that major supplier alliances be in place no later than the end of fiscal year 2004. Traveling Wave Tubes (TWTs) is the most critical supplier alliance need for the Space and C3I community, hence the decision to proceed with this stock class as our strategic sourcing initiative pathfinder. TWTs presented a support problem throughout the Department of Defense. In 2002, the Space and C3I Systems Directorate experienced high MICAP hours on specific TWT NSNs. Through the Spares Campaign and educational briefings building up to Purchasing and Supply Chain Management, the Space and C3I SCMs directed TWTs become a strategic sourcing candidate.

The benefits of Strategic Sourcing are well documented, and it is not the intent of this document to readdress its value. Due to the nature of TWTs (a critical technology that will require support for the foreseeable future) and the nature of the supply base (relatively few manufacturing and repair sources), TWTs are an

excellent choice for strategic sourcing and will ultimately be a closely monitored stock class for the electronics Commodity Council.

Advanced Planning and Scheduling

The decision to undertake an APS pathfinder was based on the need to provide the Air Force with results from the non-flying community. OC-ALC served as the initial pathfinder, testing the capabilities of an APS on a module within the F100 engine. Other pathfinders are in work, including the B-52 weapon system and B-52 landing gear. We received approval from HQ USAF/IL in May 2003 to embark on the only non-fly APS pathfinder program. The program selected was the Tactical Radar Threat Generator (TRTG), an air-transportable, self-contained shelter utilized on our test ranges. There are 37 systems in the Air Force inventory, each system contains approximately 10,000 NSNs and is repaired at Tobyhanna Army Depot. Besides being the first non-flying test of an APS, it is also the first inter-service test.

The APS tool will greatly enhance the Space and C3I SCMs' ability to support our warfighting customers. The Air Force's requirements computation process today revolves around the use of the D200 requirements system, which is a history-based requirements process based on the high-volume, consistent demand of transactions of the aircraft world. D200 has little flexibility to anticipate dynamic requirements, and little ability to share information across the supply chain. The current process is reactive in nature, burdened with long administrative and processing lead times. APS brings to the Air Force the ability to better predict the future based on future mission and equipment use. APS can adapt to the high volume aircraft requirement as well as the low volume, sporadic demands of the space and C3I world. APS brings the Air Force an integrated, exception-based planning tool that focuses on developing an enterprise-wide executable requirements plan over short, intermediate, and long terms.

Performance Based Logistics (PBL) Initiative

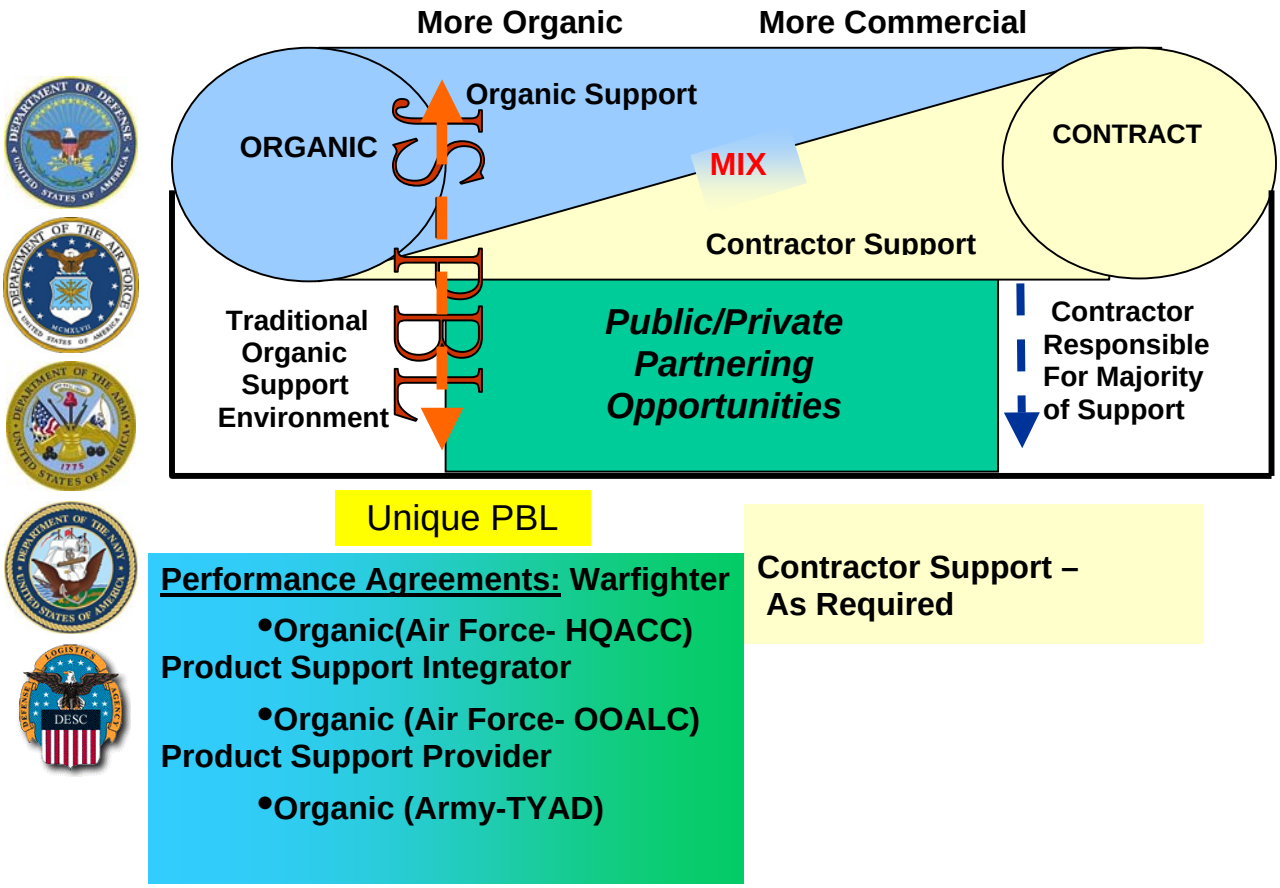
HQ AFMC has set an expectation for the implementation of PSCM that 50 percent of all buy contracts, and 70 percent of all repair contracts, be performance-based logistics arrangements by the end of fiscal year 2005. The Space and C3I Directorate selected the Ground Theater Air Control System (GTACS) TPS-75 tactical/deployable air surveillance radar system for their PBL pathfinder for the following reasons:

- The system availability of 81 percent was below the HQ Air Combat Command's (ACC's) goal of 91 percent
- This would be the first PBL with the majority of support provided organically by the Air Force and Army, with HQ ACC, Tobyhanna Army Depot, OO-ALC, and also Science Applications International

Corporation (SAIC) as the primary signatories on the PBL agreement

- This is the first inter-service test of the PBL concept
- This process will be exportable to other organically supported depot repair activities

The spectrum of PBL strategies vary from a traditional organic support environment to fully contracted support, as depicted below. The Space and C3I pathfinder



The overall objective of this PBL initiative is improved equipment availability and readiness of the GTACS TPS-75 tactical/deployable air surveillance radar system through improved depot support of the system and spares. The improved depot support is the culmination of the efforts of Tobyhanna Army Depot (TYAD), OO-ALC System Support Manager (SSM), and the contractor, SAIC.

The Program Office improved their support to the depot through: a) validation of the equipment configuration baseline and validation of parts information; b) development of a web-enabled system that allows depot planners and technicians to view current parts/configuration information and more quickly develop bills of material and order specific parts; and c) achieve automated alerts on parts which may become, or are, “diminishing manufacturing source” issues and obtain rapid replacement parts information. The contractor, Science Applications International Corporation (SAIC), is working with TYAD in providing improved materiel support for the weapon system. They have achieved this by: a) inventorying and making web-visible, existing consumable parts information; b) developing (with TYAD personnel) an active bench stock/consumable parts stock and maintain a 98% fill rate; c) working with TYAD personnel, track specific parts utilized for component/system repair to improve parts requirements forecasting, engineering needs, etc; and d) established an e-Business process for “spot buys” the procurement of additional consumable parts required for depot repair. TYAD: a) developed new bill of materials for the TPS-75; b) worked with the contractor/SAIC to develop/approve the consumable parts list for active bench stock and fund material requirements; c) identified additional consumable parts required for system/component repair (not on bench stock or available from other existing shop floor material); d) identified the requirement and acted as approval authority for price and delivery of contractor identified sources; and e) established a job tracking system that is used for monitoring parts consumption for repair of the TPS-75 components.

Diminishing Manufacturing Sources and Material Shortages (DMSMS)

Part of the PSCM case for change was that Air Force leadership is applying increasing pressure to reduce costs and improve weapon system availability. The Space and C3I DMSMS initiative allowed us to maintain existing systems for a longer period at significantly reduced costs, while at the same time increasing system availability. This initiative was designed to utilize processes and technology to identify and assess issues with Original Equipment Manufacturers (OEMs) that are no longer supporting items managed by the OO-ALC Space and C3I Directorate. These items become unsupportable with no visibility to the Supply Chain Manager as to their status. Since program inception, we experienced substantial cost savings and increased supportability of the systems that we support, quantified later in this package (Section 2-6). The process also includes the utilization of the Avionics Component Obsolescence Management (AVCOM) database that tracks component obsolescence down to the piece part level and flags the specific components that have reached critical levels of support.

The Space DMSMS Team was established February 2001. The next year C3I was added to the effort. This group is comprised of 11 personnel from two companies, Northrop Grumman Information Technology (NGIT) and

Manufacturing Technologies, Inc. (MTI). We use a two-phased approach to solving DMSMS issues. Space and C3I equipment specialists or engineers identify DMSMS problems in the form of a Problem Part Report (PPR) to the NGIT team, who actively searches for viable solutions. This is our "re-active" approach to solving DMSMS problems. PPR resolutions have been accomplished at an average rate of 26 days, far ahead of the industry average of 60 days. Approximately one-third of these PPR reports significantly reduced Space and C3I Mission Capable (MICAPs) requisitions at the Tobyhanna Army Depot.

MTI is actively engaged in a detailed technical data mining effort to extract the Bills of Material (i.e., parts lists) of every assembly in each of our systems to be loaded into AVCOM. AVCOM is the tool used by NGIT to achieve our "proactive" method of solving DMSMS problems by continually pulsing industry for manufacturing supportability for the components loaded in the system. Both the reactive and proactive methods have had phenomenal success in our organization to date.

2) Indicate the duration of the project. Note if the project was a pilot that is being rolled out. Note if the project is ongoing/still in progress

Listed below are the timeframes for each of the PSCM initiatives embarked upon by the Space and C3I Directorate.

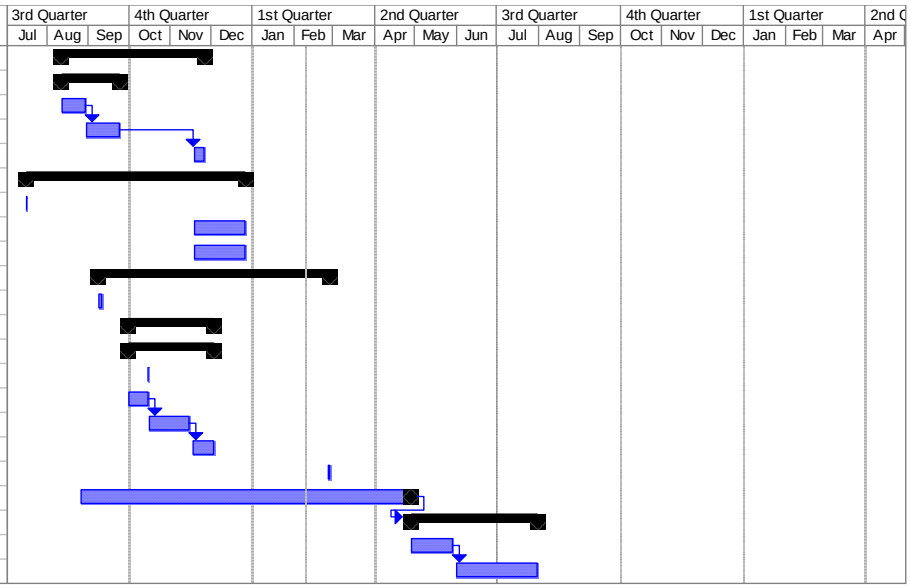
Demand Planning

The MILSTAR High Speed Printer was selected as the Demand Planning pilot for the Space and C3I Directorate in February 2003 and is still on-going as of this date. Originally planned as a six-month effort, the pilot was so successful in reducing shop flow days at Tobyhanna Army Depot that both the Air Force and Army extended the pilot indefinitely. Weekly telecoms and quarterly program reviews keep the communication and collaborative effort going. Current planning is to select more items as we continue to improve our demand planning process. The multi-service application of the Demand Planning tool has paid well, and selection of additional candidates that can ultimately increase the warfighter capability is our goal.

Strategic Sourcing

The LH Strategic Sourcing Initiative began July 2003. It is one of OO-ALC's four strategic sourcing pathfinder efforts. In 2003 the team has identified an initial focus group of NSNs to be placed on contract. Contract award is slated for July 2004.

ID	Task Name	Finish
1	***1) Spend Analysis (Refine as needed)***	Tue 11/25/03
2	**Build Database**	Tue 9/23/03
3	Identify Active Items (Complete)	Thu 8/28/03
4	Sole Source/Competitive	Tue 9/23/03
5	Identify Priorities	Tue 11/25/03
6	***2) Internal Requirements Analysis***	Thu 12/25/03
7	NAVSEA Crane (Navy) Visited HAFB	Wed 7/16/03
8	Validate Requirements	Thu 12/25/03
9	Identify Qtys-By program/Center	Thu 12/25/03
10	***3) External Market Analysis***	Fri 2/27/04
11	NAVSEA Crane (Navy) Visit	Wed 9/10/03
12	**Identify Repair/Spare Sources**	Tue 12/2/03
13	**Sources Sought Synopsis**	Tue 12/2/03
14	Generate List	Tue 10/14/03
15	Team input	Tue 10/14/03
16	Post on Web	Fri 11/14/03
17	Add to Database	Tue 12/2/03
18	Industry days	Fri 2/27/04
19	***4) Commodity Strategy Development***	Tue 4/27/04
20	***5) Commodity Strategy Execution***	Fri 7/30/04
21	RFP	Fri 5/28/04
22	Award Contract/s	Fri 7/30/04



Contract award is not the end-state of the project. Supply Chain partners will continue to identify non-value added tasks to divest, seek to improve communication and forecasting, and identify barriers to providing support requirements.

APS

This initiative was started in May 2003 with a request to the Air Staff to participate in the Air Force's suite of APS pathfinders. This pathfinder started phase I activities in February of 2004 with a completion date of end-of-year 2004. The purpose of this pathfinder is to prove APS functionality within an extended supply chain model as well as testing in a non-flying environment. Results, findings, and recommendations will be used as a template for future APS implementations.

Performance Based Logistics

This pilot project began in June 2003 with a briefing to propose the use of the PBL philosophy to improve the TPS-75 Radar support by increasing its operational availability. The briefing was provided to Mr. Lou Kratz, Assistant Deputy Under Secretary of Defense, Logistics Plans and Programs. The approach was approved on 9 June 2003 and in August 2003 the PBL Statement of Work and contract Engineering Task was complete. ADUSD/LPP provided $1.3 million to establish the Industrial Prime Vendor (IPV) process at Tobyhanna and initiate the PBL effort. The project duration is ongoing and specific goals for reduction of flow time have been set for April 2004 (see Section 2-6 for metrics tied to PBL effort).

DMSMS

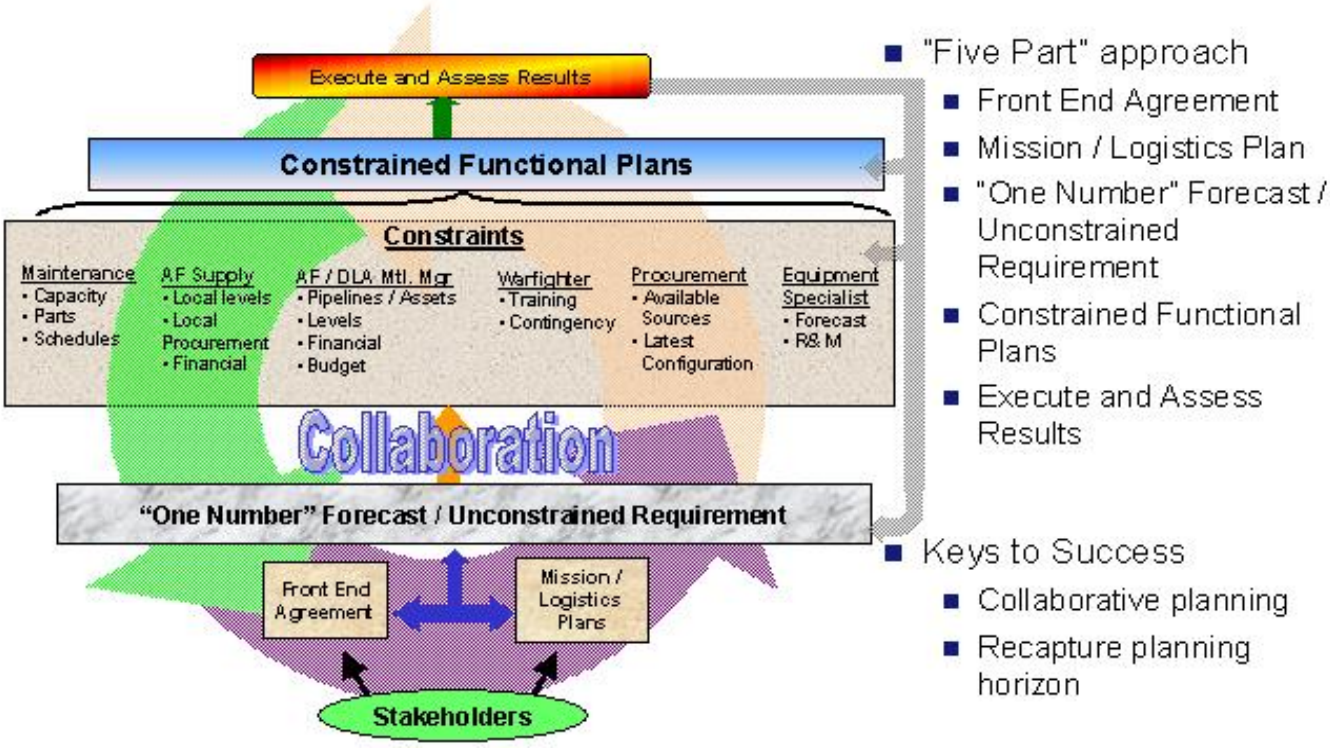
The DMSMS function was established in February of 2001 in the Space Division and in 2002 was expanded to the C3I division. This is an ongoing task and is proposed to continue indefinitely with additional systems and new modifications to be added to the AVCOM database as our systems evolve.

3) Describe in detail the process used to complete the evaluation

Demand Planning

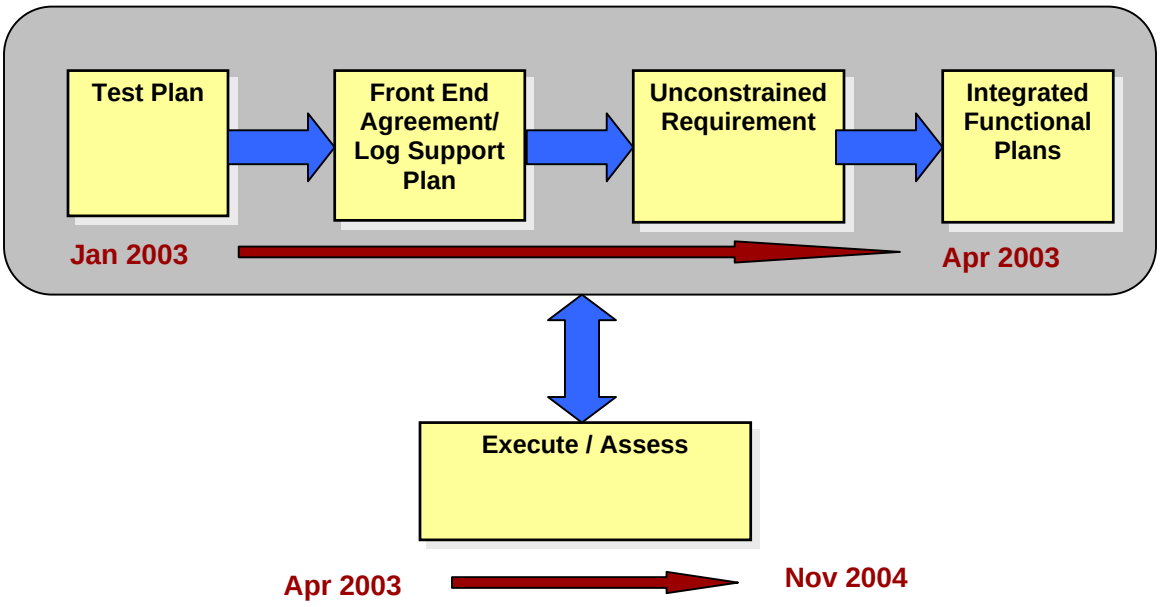
The Space and C3I Demand Planning pathfinder project was designed to evaluate the potential benefit of implementing a reengineered demand planning process in the Air Force maintenance and repair environment. The overall Pathfinder process contained five consistent elements:

a. **Front End Agreement (FEA)** that documented roles and responsibilities for all supply chain members involved in logistics system support of major end items.
b. **Mission/Logistics Plan** that documented the level of weapons system support, logistics issues and business parameters that would guide supply chain Demand Planning efforts.
c. **Unconstrained Requirements Definition** that results in a single, consistent forecast of Warfighter end item requirements that would be used as the basis for all demand planning activities. Of note, this number is based on actual Warfighter need, and does not include financial, capacity or other constraining factors.
d. **Constrained Functional Plan** that translates the unconstrained requirement into an integrated set of functional plans that consider and address constraining factors, and lay out a coordinated plan for optimizing logistics system performance.
e. **Feedback Loop** that allows for regular incorporation of feedback and accuracy adjustment into planning activities as a function of real world execution.



The MILSTAR HSP test project utilized the five step process developed during Pathfinder, with some modifications. Because the HSP test project is small when considering the unconstrained requirements and number of constituent components to the assembly, we were able to combine the FEA and the Logistics Plan into one document.

A Test Plan to identify and document objectives, assumptions, and all resource requirements, for Top Level Management project approval was created to kick the project off.



Defense Repair Information Logistics System (DRILS) and related hardware has been used in the MILSTAR Repair Shop to collect necessary repair actions, part consumption, and other related data. This is a web-based, agile information server that provides a user friendly maintenance data collection and retrieval application. OO-ALC provided to TYAD the appropriate DRILS hardware, software, training, and other support necessary to conduct the test.

An inter-service core team was created, and defined in the FEA, to manage the project, make specific decisions on how to anticipate and mitigate constraints to achieve a reduction in flow days, and to improve warfighter support. The core organizations agreed to share all necessary information with each other. Information sharing promoted collaboration and encouraged representatives to identify potential problems that may hinder the progress of the repair flow process. Weekly teleconference reviews have been convened to address the status of the project, including shop schedules, flow times, forecasting of parts and asset demands, and action item updates.

Core team members include representation from the following organizations:

OO-ALC:

- Logistics Management Specialist (LMS) (1)
- Equipment Specialist (ES) (1)
- Production Management Specialist (PMS) (1)
- Inventory Management Specialist (IMS) (1)

- Defense Repair Information Logistics System (DRILS) contractor (1)
- Dynamics Research Corporation (DRC) contractor project support (1)

TYAD:

- MILSTAR Shop Chief (1)
- MILSTAR Shop Supervisor (1)
- MILSTAR Shop Repair Technician (1)
- Production Controller (1)
- Supply Technician (1)

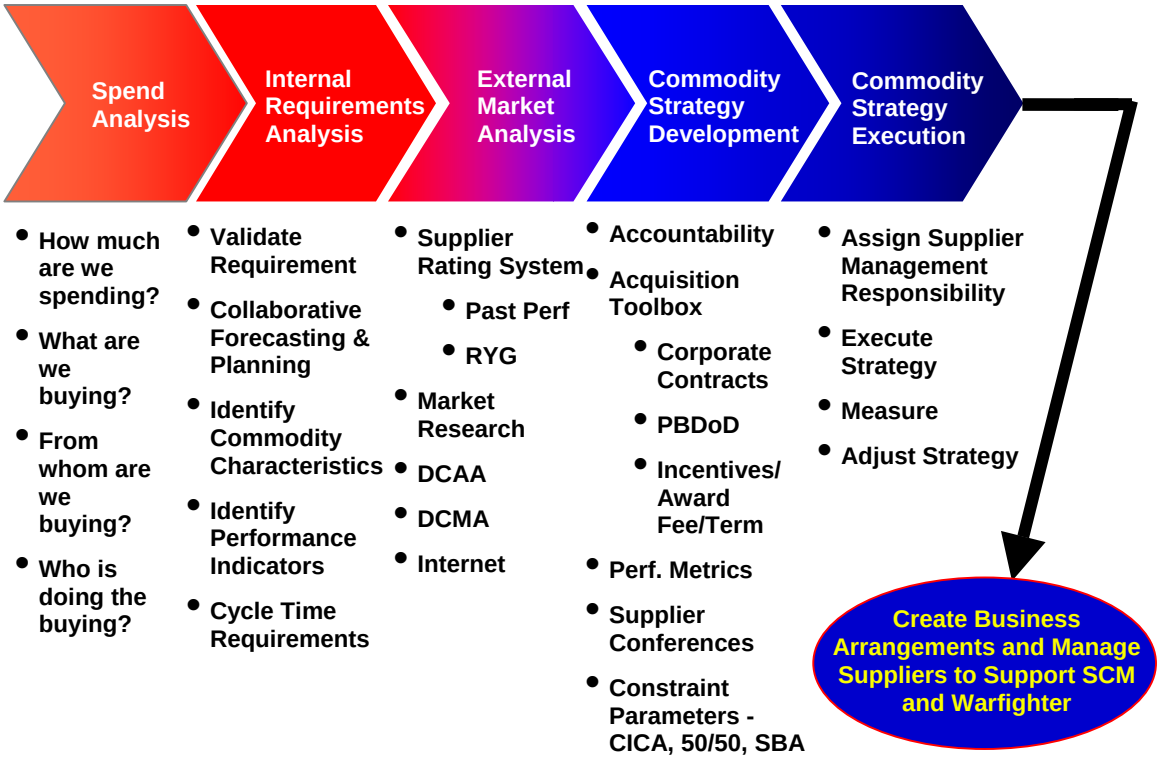
DLA:

- TYAD On-Site Customer Support Representative (1)

Strategic Sourcing

The LH VED (Vacuum Electron Device) SSI's (Strategic Sourcing Initiative) intent is to move from tactical support of VEDs to strategic support. By combining requirements across weapon systems and potentially across organizations and services, reductions in cost can be realized. Additionally, and perhaps more importantly, strategic support vise tactical support can identify organizational barriers precluding required support levels. Our goal is to provide improved operational customer support by providing measurable reductions in ALT (administrative lead-time), PLT (production lead-time), MICAP hours and back orders.

Through this initiative we intend to provide centralized support and decentralized execution. Currently, assets are managed, procured, and repaired from within the weapon system support structure. A support contract that can be made available to multiple users will be an important first step. This five step strategic sourcing model is being used as a guide:



Step one, Spend Analysis, is a step in strategic sourcing an organization would use to identify targets to begin investigation.

VED is a commodity group that includes Traveling Wave Tubes (TWTs). TWTs have presented sustainment problems throughout the Department of Defense. In 2002, the Space and C3I Systems Directorate (LH) was experiencing high MICAP hours on specific TWT NSNs. Through the Spares Campaign and educational briefings building up to Purchasing and Supply Chain Management, the Directorate head understood the benefits that can be realized through strategic sourcing could provide a solution and directed TWTs be evaluated as a potential strategic sourcing candidate.

The benefits of Strategic Sourcing are documented well, and it is not the intent of this document to readdress the value of strategic sourcing. However, due to the nature of TWTs (a critical technology that will require support for the foreseeable future) and the nature of the supply base (relatively few manufacturing and repair sources), TWTs are an excellent choice for strategic sourcing and will ultimately be an excellent candidate for a Commodity Council.

The LH VED SSI is both inter-service and inter-divisional. The Naval Surface Warfare Center at Crane, IN, (Crane) maintains capabilities and infrastructure to provide a single inventory control point for VEDs used in the Navy. We are partnering with Crane to identify an appropriate fit in our processes as we search

for improved value for our customers. Crane has received the charter of Executive Agent for the DoD for Microwave Technology which includes VEDs.

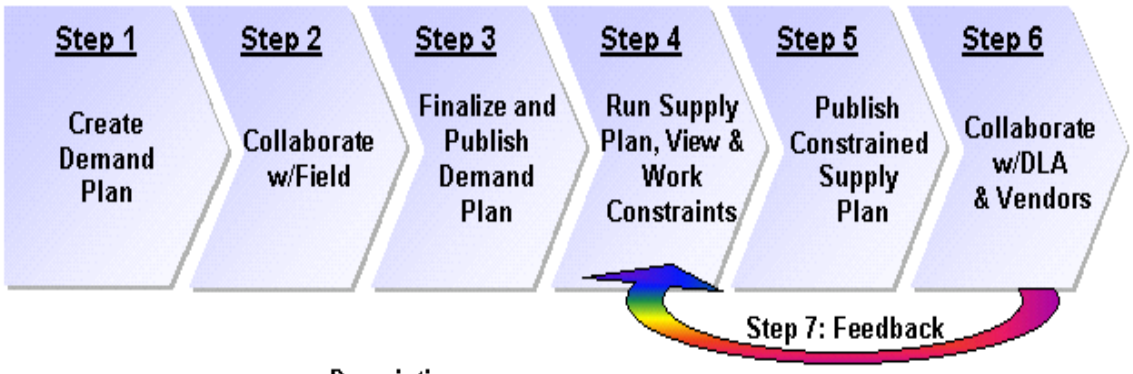
Mission Statement

The DoD Executive Agent for Microwave Tubes shall facilitate coordination of DoD activities and investments to ensure microwave power tube industrial and technical capabilities will continue to be available to meet future DoD requirements.

Additionally, the Army has shown interest at Tobyhanna and stands ready to participate as this initiative matures. Additional partners for the Space and C3I Directorate include our Logistics Management Directorate (LG) and the Acquisition Excellence Directorate (AE). A Memorandum of Agreement (MOA) has been signed by the Directorate heads identifying roles and responsibilities in support of this initiative. LH responsibilities include leading the team and identification of requirements. AE is supporting the team through the acquisition process, and LG is guiding the team through the steps of strategic sourcing and capturing lessons learned.

Advanced Planning and Scheduling

Our Army/Air Force/Industry APS team will begin by creating an unconstrained forecast of demand for the TRTG system at the Shop Replaceable Unit (SRU) level, finishing with a constrained line-item by line-item forecast that has been scrubbed through the team. Below is the step-by-step demand planning process the APS team is following:



Step	Description
1. Create Demand Plan:	AF Item Manager creates an unconstrained demand plan at the SRU level based on historical consumption.
2. Collaborate w/Field:	Use the NetWORKS Collaborate application to adjust the demand plan w/Engine Manager input.
3. Publish Demand Plan:	AF Item Manager finalizes / publishes Demand Plan. Forecast made available to Supply Planning.
4. Run Supply Plan:	AF Item Manager create an unconstrained requirement by exploding demand plan against the Bill of Material. Capacity, supply and financial constraints identified and applied.
5. Publish Supply Plan:	AF Item Manager publishes constrained Supply Plan; made available to the NetWORKS Collaborate application.
6. Collaborate w/DLA & OEM:	Use the NetWORKS Collaborate application to adjust the Supply Plan w/DLA or OEM input.
7. Feedback:	DLA / OEM support constraints identified; iterative application to planning.

The APS Team consists of a program manager, equipment specialist, production management specialist, and a wholesale item manager. The team leveraged work done within the initial APS pathfinder project on the F101 engine at OC-ALC. The work and findings as a result of that project need to be expanded in several areas to see if this approach is successful within the Space and C3I arena. The TRTG program introduces new areas in which to test APS applicability. These areas include extending the planning function into non-Air Force enterprises within the extended supply chain model as well as testing in a non-flying environment.

The TRTG team determined that a phased approach is necessary to complete their project.

Phase 1:
The first phase of the project is the Business Requirements Definition and Decomposition Process. Activities during this phase include an assessment of current business practices, definition of software and data requirements to support business objectives not only within the Air Force but including activities at Tobyhanna Army Depot. The interplay and collaboration between the different enterprises involved in the repair of the TRTG program. Definition of specific

process steps includes process validation and rationalization and brief process review workshops and training.

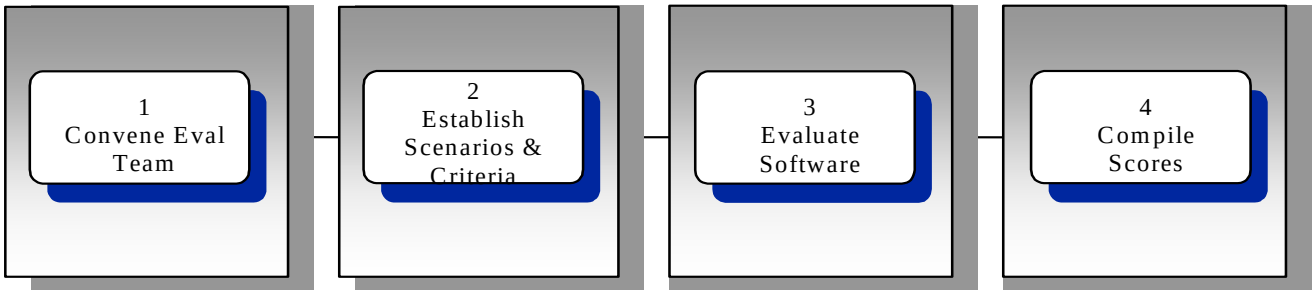
Phase 2:
After the business requirements and functional processes are developed, data requirements and sources will be identified. Activities in this phase focus on defining, documenting, and mapping both the AF data requirements and Tobyhanna data requirements to support the different functional processes. This activity includes mapping requirements to the Logistics Modernization Program (LMP) being implemented at Tobyhanna as part of the Army Transformation Initiative.

Within Phase 2, the APS Pathfinder Data Mapping Report will document the AF, DoD Legacy Systems, Tobyhanna systems, data warehouses and databases, OO-ALC unique localized systems and data repositories, and gaps where viable data was non-existent in support of the TRTG repair and maintenance program. The data outlined in the data map will be necessary to establish the APS Pathfinder test environment and the configuration of the APS software as outlined in accordance with the Statement of Work and the APS Pathfinder Concept of Operations. A data configuration document, specific for each module, detailing the assumptions and processes behind the mapping of the AF Supply Chain data into the APS software will be created. The data configuration document, like the data mapping report, is a living document, updated as the pathfinder proceeds and incorporates functionality. Additionally, the data map report will discuss current understanding and future data considerations necessary to establish the APS in a live, full implementation environment. The Data Mapping Report is considered a draft, as final results are refined throughout Phase 3 and used as input in the course of the APS Pathfinder evaluation and within Section 4.

Phase 3:
Activities in this phase focus on incorporating the required data elements into APS functionality and in standing up the defined processes both internal and external to the Air Force.

During Phase 3 the business requirements are translated into functional demonstration scripts. The APS Organic team will develop detailed technical requirements that will be used as part of the overall assessment during Phase 4 and expanded scenario testing.

Phase 4 tests the applicability of the configuration of APS software, the interplay between the APS system and the Army's LMP system at Tobyhanna as well as the efficiency of the defined collaboration processes defined within the extended TRTG supply chain environment. A basic four-step approach is utilized to evaluate the APS functionality and processes within the AF TRTG repair environment.



An evaluation team is assembled with representatives from the various branches within OO-ALC to formulate evaluation criteria. The APS Team will confer with Bearing Point technical personnel and AF subject matter experts (SME) to develop a framework for process evaluation that test the capabilities and fit of the defined processes within the TRTG maintenance and repair environment. AF personnel are responsible for developing and weighting all grading factors used in the APS assessment. Scores are captured and consensus scores are derived and analysis is accomplished.

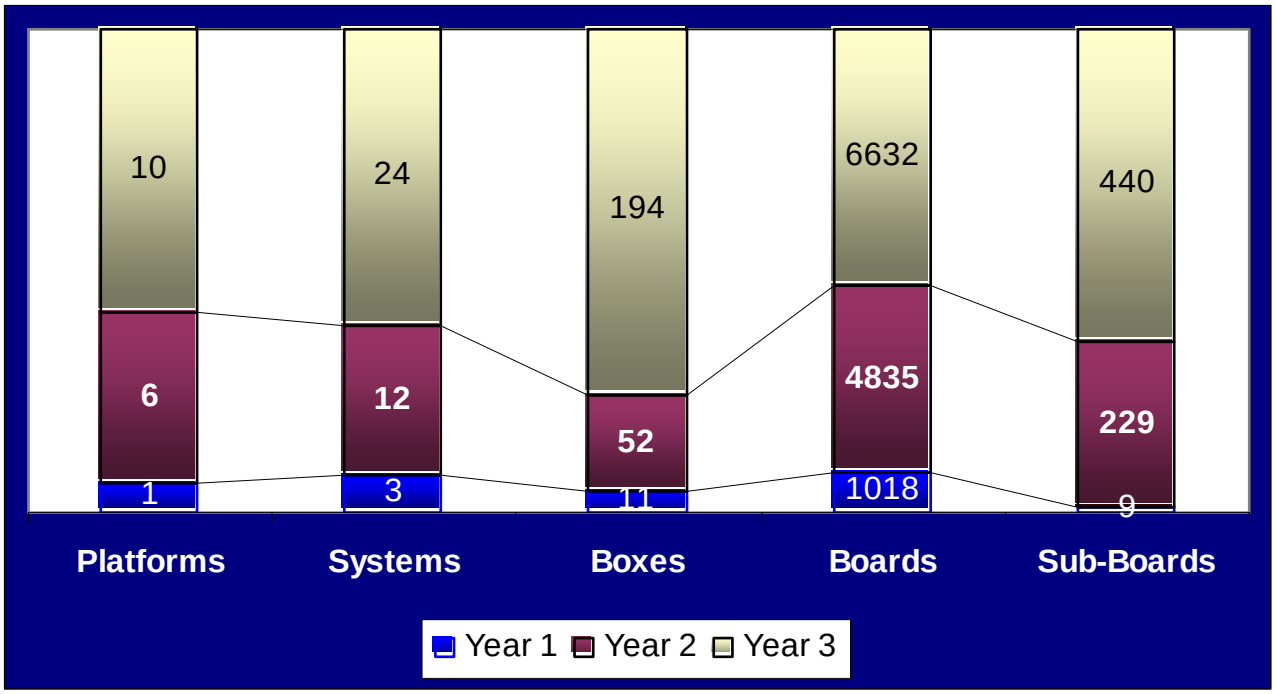
Phase 4:
Phase 4 of the project will develop plans for implementing and institutionalizing recommended Supply Chain Management improvements. Results of these findings will be used as the basis for establishing ALC, AFMC, and AF policy for both internal and extended supply chain processes. Further implementation will be incorporated in the TRTG Sustainment Program. These results will also be used as suggestions and recommendations for other initiatives across the Air Force community.

Performance Based Logistics

The PBL approach was approved by Mr. Lou Kratz, Assistant Deputy Under Secretary of Defense, Logistics Plans and Programs, in June 2003. In August 2003 we completed the PBL statement of work and received $1.53 million to proceed with the project. The PBL contract award with SAIC occurred in September 2003. In January 2004 the PBL team completed the Joint Service/Future Logistics Enterprise Task Order using the PBL Agreement as a baseline. Currently the PBL team is cleansing the TPS-75 Bill of Material (BOM) and validating/modifying inventory levels at Tobyhanna Army Depot. Supply procurement strategies are being established for each of the components on the system. The team is establishing a process, using the Army's recently-installed Logistics Modernization Program (LMP), to perform demand analysis, master scheduling, material and capacity planning, and parts routing within the shops at Tobyhanna.

DMSMS

Our DMSMS project, in existence since 2001, will continue to run as long as the Air Force maintains the outdated, but mission critical, Space and C3I equipment and systems. There are currently six space platforms loaded in the AVCOM data base, with four additional to be loaded by the end of 2004. There are four major C3I platforms loaded, with six additional to be loaded by the end of 2004. The chart below breaks down the AVCOM loading plan a platform down to the circuit board level for the years 2002 through 2004.



4) Identify significant challenges encountered, the process for resolution, and the solutions. Identify any best practices employed or developed.

Performance Based Logistics (PBL), the Advanced Planning and Scheduling System (APS), and Demand Planning are initiatives that were selected to enhance our partnership with Tobyhanna Army Depot (TYAD) and improve our customer support. Inherent problems existed from inception due to the geographic separation of the repair depot and the supply chain manager. A considerable amount of time was expended to understand each of our internal processes. Awaiting Parts (AWP) and undocumented cannibalization were causing delays in the repair process that delayed end item production. Other problems with material utilization and requisitions were identified as major stumbling blocks in the final delivery of assets. The Defense Logistics Agency (DLA) was brought in on the demand planning and PBL functional teams to

address requirements for consumable assets. OO-ALC provided tool sets like DRILS to ensure data needs on both sides were met.

Greater benefit can be realized with strategic sourcing with greater economies of scale. At inception our initiative intended to include requirements across the Air Force and potentially across the DoD. Contact was made to Warner Robins and the Navel Warfare Center in Crane, IN. However, Aircraft and Navel requirements do not necessarily reflect the requirements in the Space and C3I Systems Directorate. We intend to find solutions for this commodity, and want to ensure the idiosyncrasies experienced in Space and C^3I are adequately addressed.

Therefore, we have sought to identify an initial group from Space and C3I to focus our efforts. Looking at 357 NSNs, we have eliminated items the Air Force does not manage and inactive items. We also eliminated items for which we have specific dates for obsolescence and an adequate quantity in supply to bridge the gap from now to decommissioning. Our focus group today includes 39 competitive and six sole source NSNs.

There is a very limited number of repair and manufacturing sources for our requirements. Our next step will be to include industry to identify solutions to problems faced by the focus group of NSNs. We will also seek to identify how representative our group is to the population of this commodity in the DoD in an attempt to provide a path for centralized support and decentralized execution.

The Space and C3I Directorate has generated the greatest return on investment of all the PSCM initiatives. The road to success required significant investment in the AVCOM database as well as contract engineering support. The problems encountered were many when we were trying to convince our external partners that we needed to collectively address obsolescence at the system level not only with our legacy TWTs, but also with our new acquisitions. The Ogden team took on the challenge, and we established a quarterly, co-chaired DMSMS technical exchange meeting with each of our customers. This meeting was proposed to the space community to be held at OO-ALC and at Colorado Springs on a rotating basis. The results were identified priorities in the DMSMS arena and we are continuing to hold these meetings and share data and results with all of our external partners.

5) Identify the metrics used to measure progress and success

Air Force Materiel Command (AFMC) has developed stretch goals for the implementation of PSCM. Everything we do as a command, and the dollars we spend, must be measured in terms of meeting availability and cost goals. The primary goals for PSCM are:

- 20 percent increase in aircraft availability by the end of 2006

- Zero operations and support cost growth over the FY 04-09 FYDP
- 50 percent decrease in total cycle time by the end of 2006
- 20 percent decrease in material purchase and repair costs by the end of 2006

The Space and C3I Directorate has developed metrics for each of their initiatives that will help it support the AFMC goals. For demand planning, the primary metrics are shop flow days, customer wait time, and customer fill rate. We have seen significant reductions in shop flow days and backorders, but to date have seen little change in customer wait time. For strategic sourcing we are measuring administrative leadtime savings and reductions in MICAPs and backorders from our customers. We have baselined these metrics and will start tracking improvement upon contract award in July 2004. The strategic sourcing team's intent is to move from tactical support of TWTs to strategic support by combining requirements across weapon systems, and potentially across organizations and services. The goal is to provide improved operational customer support by providing measurable reductions in ALT (administrative lead-time), PLT (production lead-time), MICAP hours and backorders. The Advanced Planning and Scheduling (APS) metrics measure:

- Reduction of cycle times
- Increases in order fulfillment
- Increase in system availability

Our PBL team, comprised of representatives from the Space and C3I Directorate, Tobyhanna Army Depot, and DLA, has the following short and long term goals:

April 2004

- 17 percent reduction in depot flow time
- 10 percent reduction in unit funded cost
- 5 percent reduction in MICAP requisitions

March 2005

- 33 percent reduction in depot flow time

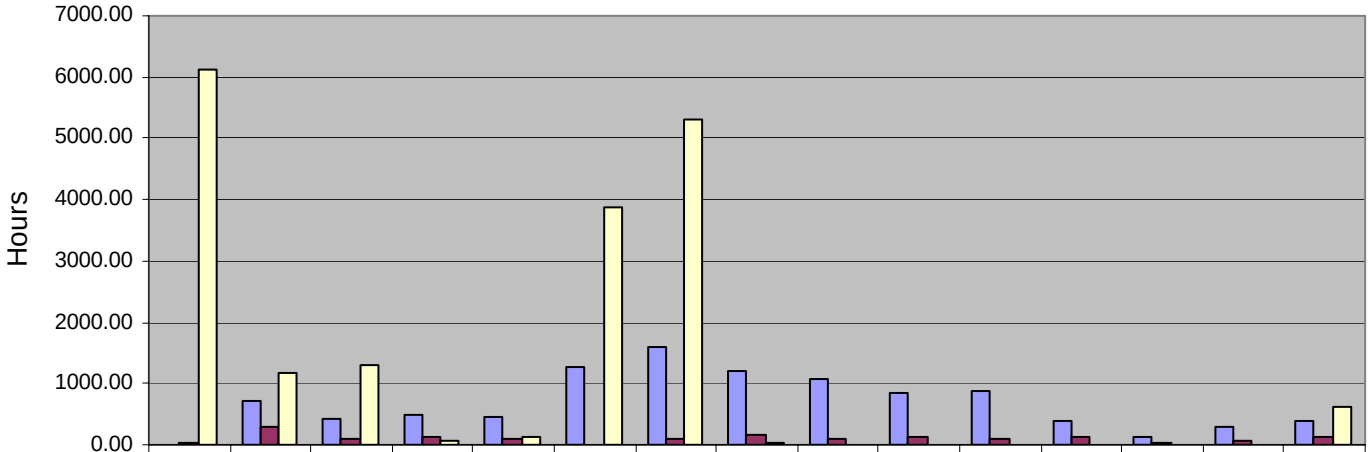
DMSMS, as described in the next section, focuses on cost savings and avoidance as primary metrics.

6) Document and quantify cost and performance benefits, including the projects' returns on investment and changes in the value of one or more of the SCOR Level 1 metrics

Demand Planning

The Space and C3I Directorate, in collaboration with Tobyhanna Army Depot, has achieved a 66 percent reduction in flow days on the Milstar High Speed Printer repair. The demand planning project has also reduced AWP time by 40 percent, and reduced actual labor touch time by 10 percent. These results are increasing system availability in the field. The chart below shows the in work, awaiting parts, and awaiting maintenance times for each of the High Speed Printers inducted into Tobyhanna for the year 2003. Prior to the initiation of our joint demand planning project, this information was not captured by either the Army or the Air Force on this item. The collaborative process of tracking consumption, stocklisting and proper coding of DLA piece parts, and forecasting has resulted in improved support for our customers. Improvements resulting from this project change the value of the following SCOR Level 1 metrics:

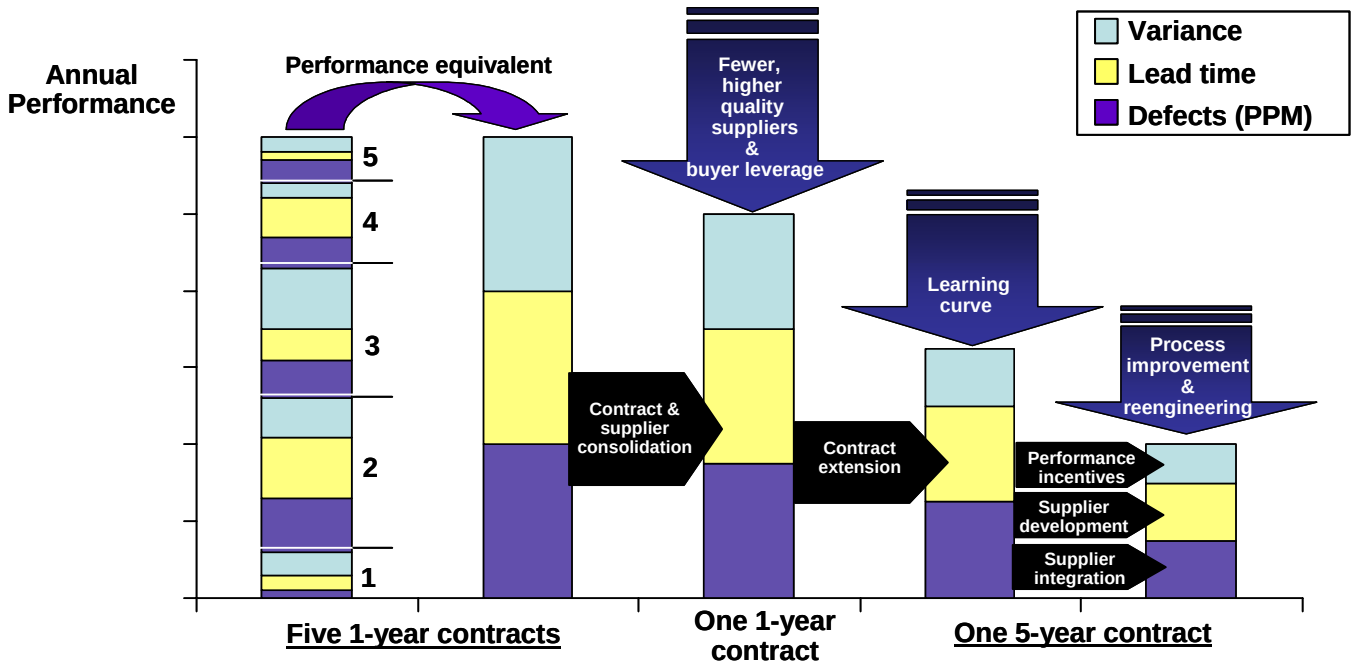
- Delivery performance
- Fill rates
- Perfect order fulfillment
- Order fulfillment lead times
- Supply chain response time
- Supply chain management costs
- Cost of goods sold
- Inventory days of supply
- Asset turns



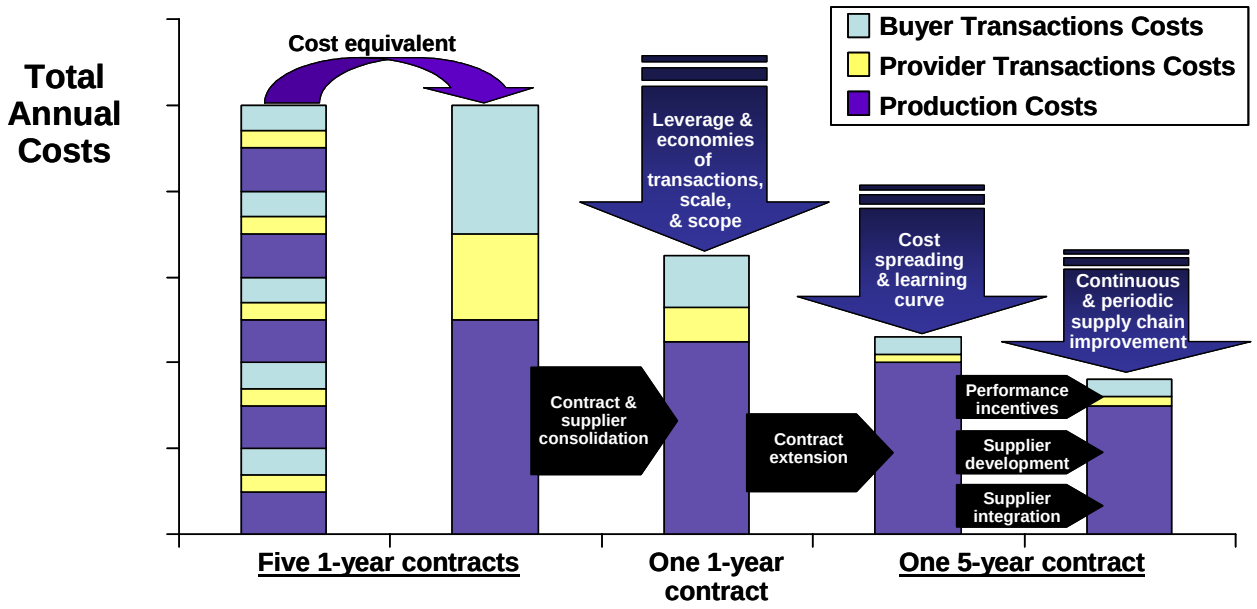
	1011 (un-ser)	3042 (Serv)	3029 (Serv)	1084 (Serv)	3032 (Serv)	3026 (un-ser)	1021 (Serv)	3021 (Serv)	3001 (Serv)	1039 (Serv)	1027 (Serv)	1042 (Serv)	1075 (Serv)	1045 (Serv)	1002 (AWM)
AWM Hours	0.00	713.65	435.38	495.27	465.00	1272.58	1599.42	1193.32	1060.23	847.10	873.20	402.40	126.15	287.83	390.80
INW Hours	17.00	280.03	106.85	131.67	90.77	5.50	90.75	146.73	113.00	139.05	105.77	119.43	35.37	65.42	118.77
AWP Hours	6105.45	1163.72	1311.22	73.02	143.70	3862.42	5322.50	23.68	0.00	0.00	0.00	0.00	0.00	0.00	617.50
Inducted	2/28/03	2/28/03	2/28/03	3/11/03	3/11/03	4/10/03	4/10/03	5/1/03	5/1/03	6/18/03	6/18/03	7/29/03	8/21/03	8/21/03	12/17/0
Sold		5/14/03	5/16/03	4/9/03	4/9/03		1/27/04	6/27/03	6/19/03	6/29/03	6/29/03	8/20/03	8/28/03	9/5/03	

Strategic Sourcing

The benefits of strategic sourcing support SCOR Level 1 Metrics. Upon contract award, we will see improvements in delivery performance and fill rates, and will move towards perfect order fulfillment. By establishing a long-term strategic alliance for TWTs, we will reduce our order fulfillment lead times and, by committing guaranteed workload long term, significantly reduce our supply chain management costs. Below are two examples portraying the performance and cost improvements through strategic sourcing.



Alternative supplier relationships



Alternative supplier relationships

Advanced Planning and Scheduling

The full implementation of APS will allow the Air Force demand planner to manage production planning and inventory by defining a supply chain operational plan that balances inventory and fill rates through “what if” and “what is” analysis. APS will enable a “management by exception” solution generating a prioritized plan analyzing constraints based on factors such as parts, labor, carcasses, and budget.

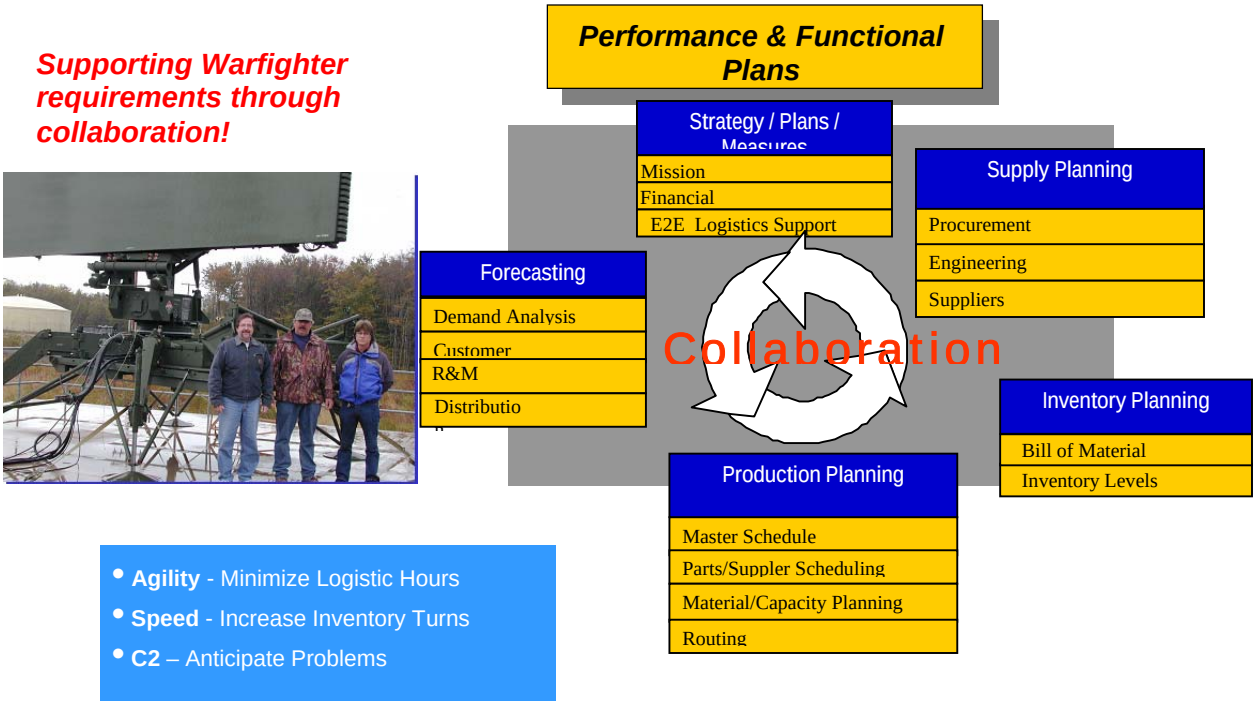
The SCOR Level 1 metrics enhanced as a result of this project include:

- Delivery performance
- Fill rate
- Perfect order fulfillment
- Order fulfillment lead time
- Supply-chain responsiveness
- Supply chain management cost
- Value-added productivity

Performance Based Logistics

Our PBL objectives, as depicted below, are to:

- Improve weapon system budget forecasting. This will be accomplished through a collaborative Army-Air Force effort to perform trend analysis at the component level. This capability will give us the ability to justify sustainment dollars for reliability and maintainability improvements and technology infusion
- Automate maintenance failure data, preferably through the Logistics Modernization Program (LMP), and track components through the use of Automated Identification Technology (AIT)



The SCOR Level 1 metrics enhanced as a result of this project include:

- Delivery performance
- Fill rates
- Perfect order fulfillment Supply-chain response time
- Supply chain management costs
- Inventory days of supply

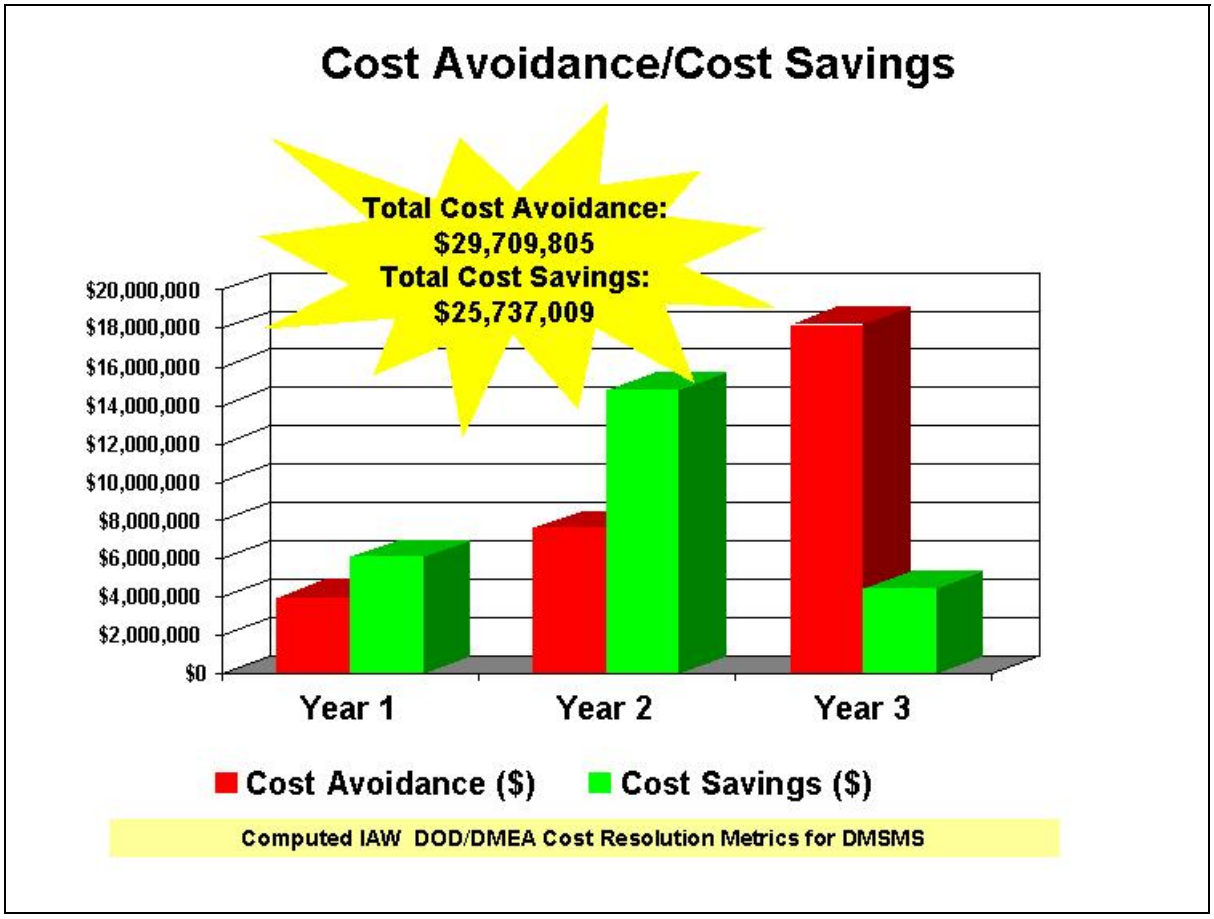
DMSMS

The result is a combined cost avoidance/cost savings of over $60 million since program inception. That includes $1.56 million for Space, and $14 million in cost avoidance for C3I in 2003. Overall, the results for both Space and C3I have provided the Space and C3I Directorate with a straight-line benefit of 23-1 return on investment between the years 2001-2003.

MTI is actively engaged in a detailed technical data mining effort to extract the Bills of Materials (i.e., parts lists) of every assembly in each of our 15 weapon systems to be loaded into AVCOM. AVCOM is the tool used by NGIT to achieve our “proactive” method of solving DMSMS problems by continually pulsing industry for manufacturing supportability for the components loaded in the system. Both the reactive and proactive methods have had phenomenal success in our organization to date.

The SCOR Level 1 metrics changed as a result of this initiative are as follows:

- Delivery performance
- Fill rate
- Perfect order fulfillment
- Supply chain response time
- Supply chain management cost



7) Outline how the success of the organization supports the organization's objectives described in Section 1, Item 3

Performance Based Logistics (PBL) and Strategic Sourcing (SSI) initiatives are still in a development stage, but objectives for these initiatives are promising and early established short-term goals have been realized. The inter-service collaboration has far out paced our expectations and our dealings with DLA, the Navy, and TYAD have been outstanding.

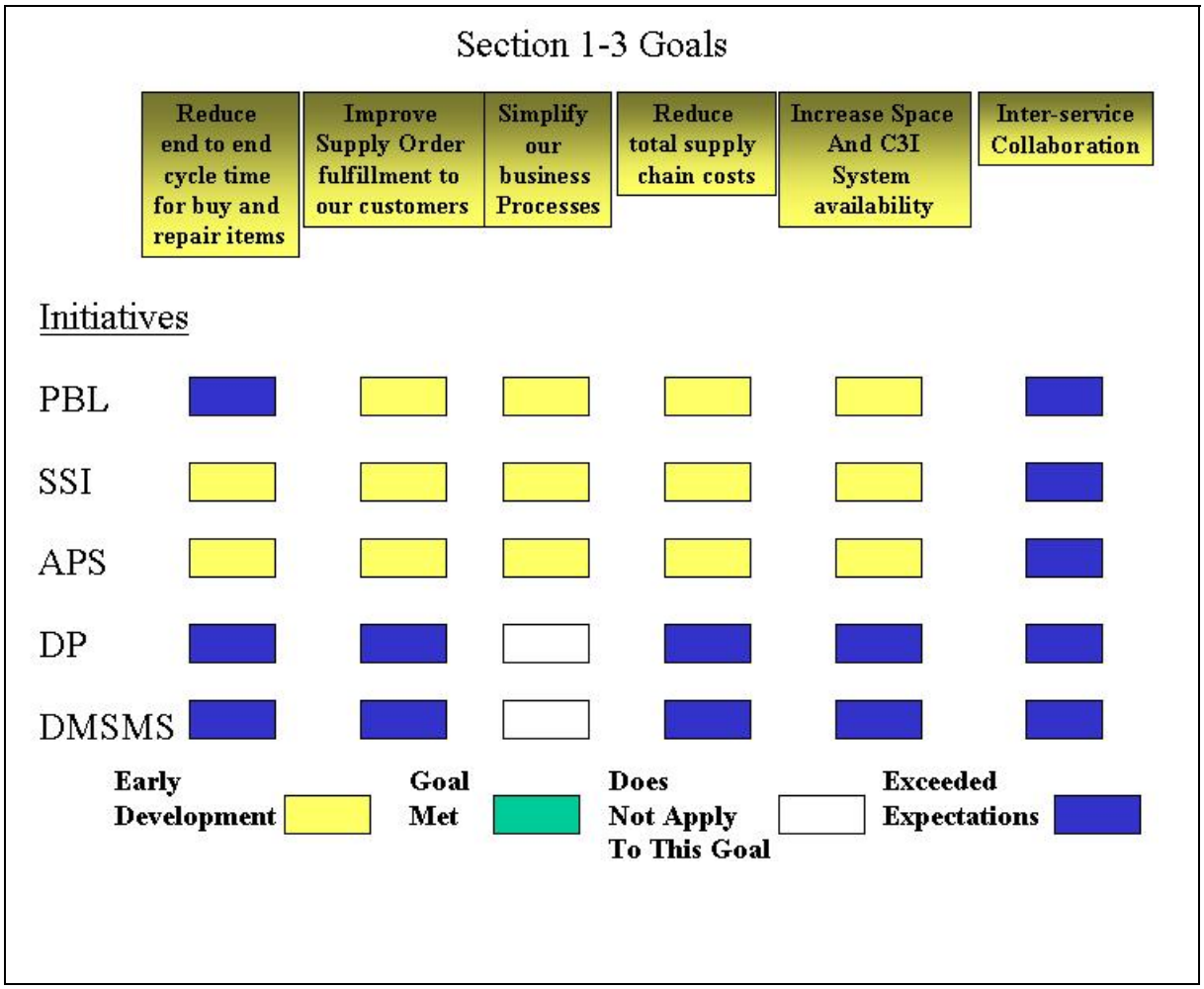
The Use of Advanced Planning and Scheduling (APS) for our Demand Planning (DP) and SSI initiatives has been invaluable.

The DP initiative provided the SCM partners with insight to processes and initiatives that have drastically improved our end-to-end cycle time (80% reduction) and provided tool sets to the Army and DLA that have changed the way they do business.

Utilization of our Diminishing Manufacturing Sources and Material Shortages (DMSMS) team gave us the focus we needed on supply order fulfillment to our customers. We have been able to reduce our backorders by 58% and provide contract vehicles for buy and repair in a fraction of the normal time to award.

The DMSMS team alone has provided both internal cost savings amounting to millions of dollars and also has provided our partners with a source for research and resolution of aging equipment that did not exist before. The DMSMS activity has far exceeded our expectations in cost savings, increased system availability, customer satisfaction and reduction in cycle time for our buy and repair activities.

The reality of these initiatives changing our business practices and strategy is apparent, and the lessons learned are invaluable to the success of the Supply Chain Management activities here at Ogden Air Logistics Center. Moreover our external and internal partnerships have changed and strengthened because of the direction that we undertook in adopting and embracing the PSCM philosophy and concepts.



SECTION 3: KNOWLEDGE TRANSFER

1) Describe the efforts to share lessons from this effort with other internal organizations

The tool sets developed by the Space and C3I Directorate have been briefed at the highest levels within OO-ALC and are available to those who wish to take advantage of them.

The Space and C3I Directorate continues to posture to lead the PSCM efforts here at Ogden ALC, and we have been recognized as a front-runner in pioneering and championing all aspects of PSCM. The Demand Planning**,** APS, PBL, Strategic Sourcing, and DMSMS initiatives lessons learned are documented, and are briefed to all directorates and posted on common shared utilities for ease of access. The DMSMS program was featured as a DoD-model program at the FY03 DoD DMSMS Symposium. The fielding of these supply

chain management tools results in improved delivery performance and lower costs of goods sold for our customers. The APS project was a collaboration with HQ USAF/IL and our partners in WR-ALC and OC-ALC for sharing lessons learned and idea exchange for future growth of this principle.

Tool sets such as AVCOM migrated to web-based systems accessible to all of our internal partners. The DMSMS functions are shared internally with all of our customers, and the program has been recognized as a leader in this ALC for cost avoidance and cost savings.

2) Explain how this initiative can be transferred to other organizations, and specify the likely candidates for transference

The unique structure of the Space and C3I community with a vast list of external partners, both for sustainment and development, has afforded us a unique opportunity for information and technology exchange. The last BRAC mandated that many of our space programs be supported through Tobyhanna Army Depot for our organic depot maintenance, while many others are supported through a Primary Inventory Control Point other that the Air Force. We have partnerships with the Army and Navy for Sustainment of our Space and C3I assets.

Aspects of PSCM with initiatives like APS, Strategic Sourcing, and PBL are now utilized to strengthen our relationships with our Army and Navy partners. The systems like the TPS-75 Radar, MILSTAR High-Speed Printer, TWTs and VEDs will set the stage for applying principles of these initiatives across new and existing systems for many years to come.

The VED strategic sourcing initiative is both inter-service and inter-divisional. The Naval Surface Warfare Center at Crane, IN, (Crane) maintains capabilities and infrastructure to provide a single inventory control point for VEDs used in the Navy. We are partnering with Crane to identify an appropriate fit in our processes as we search for improved value for our customers. Crane has received the charter of Executive Agent for the DoD for Microwave Technology which includes VEDs. Additionally, the Army has shown interest at Tobyhanna and stands ready to participate as this initiative matures. Additional partners to the Space and C3I Directorate in this initiative include our Logistics Management Directorate (LG) and the Acquisition Excellence Directorate (AE). A Memorandum of Agreement (MOA) has been signed by the Directorate heads identifying roles and responsibilities in support of this initiative. The Space and C3I Directorate's responsibilities include leading the team and identification of requirements. AE is supporting the team through the acquisition process, and LG is guiding the team through the steps of strategic sourcing and capturing lessons learned.

The DMSMS process, the AVCOM database, and Drills software have been given to the Army, Navy, and HQ Air Force Space Command for the purpose of

technology insertion to legacy processes to advance and enhance support to the warfighter. We are partnering with the Naval Surface Warfare Center at Crane, IN, for support of the aging VEDs and TWTs used by all services and all elements of the Air Force Material Command.

The PBL initiative was a direct collaborative effort with the Assistant Deputy Under Secretary of Defense for Logistics Plans and Programs. Mr. Lou Kratz approved the initial funding of $1.53 million in August of 2003 to the Space and C3I Directorate here at Ogden to begin our PBL project.