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The Development of a CSA Smart Supplier – A Case Study

Terry Weiner, Sr. Consultant, CMTC

As a partner in the CSA Workforce Innovation In Regional Economic Development (WIRED) Project, CMTC was asked to leverage work that we have done in the past along with the work of other CSA WIRED team members, Boeing and Cerritos Community College, in doing a pilot supplier improvement and development project with a selected aerospace supplier.

Omega Precision was founded more than 40 years ago, and has earned a reputation for quality and machining expertise by performing close-tolerance machining on a wide variety of materials. Operating in a 16,000 square foot facility in Santa Fe Springs, California, Omega Precision specializes in complex precision machining and employs thirty highly-skilled craftsmen and professionals using state-of-the-art manufacturing technology.

CMTC began working with Omega Precision in late 2006 as part of the Mentor Protégé program sponsored by Boeing and Project Managed by Cerritos Community College. Omega Precision has responded to the desire of primes to provide higher levels of value and integrated solutions, by developing a widened range of subcontractors as well as the capability to manage them. This has resulted in Omega Precision being selected by Boeing as Supplier of the Year in May 2008. These improvements have also resulted in the company winning a large program requiring the use and management of several sub-tier contractors. Omega Precision's ability to improve in their supply chain management capability has resulted in an increase in business of more than 15% over the last year.

Boeing has sponsored Omega Precision in the Air Force's Mentor Protégé program and has provided them with access to training and mentoring provided by Boeing, Cerritos Community College, Florida State University, and CMTC. Assistance provided included:

- Training to achieve AS9100 Certification
- High Speed Machining
- Gibbs CAM Training
- Sub Assembly Training
- Health & Safety Training
- Zeiss Training

- AS9100 Training & Implementation
- Lean 101 Manufacturing Training
- Lean Leadership Workshop
- Value Stream Mapping Workshop
- Principles of Kaizen Techniques Workshop
- ERP/MRP Workshop
- Microsoft Office Training
- Introduction to Project Management
- Team Building
- HR Process Training

In addition, CMTC has applied the resources afforded through the CSA WIRED Department of Labor program to further develop supplier assessments to determine how well a supplier meets the “Smart Supplier” requirements (see next page).

Because of Omega Precision’s success in the development of their supply chain and their selection as a Boeing Supplier of the Year, they are an ideal candidate to be provided additional training in Sub-tier Management skills as well as support in other areas as indicated in the Aerospace Supplier Management Self Assessment tool, CMTC’s Transformation Planner, and Antelope Valley College’s 21st Century Supplier Survey.

Omega Precision has been invited to participate in the Supply Chain Management course being developed by El Camino College and Antelope Valley College. The goal is to provide Omega Precision with the training and support they need to continue their growth as a key supplier to Boeing and other aerospace primes.

Smart-Supplier Requirements

Looking Upstream in the Supply Chain – (What does my customer want?)

- ITAR compliance
- Capabilities for involvement with design collaboration – New product design, DFMA, Engineering Analysis, NDT, Prototyping, DFSS
- Metrics in place for On Time Delivery
- Risk analysis and mitigation planning
- Establish cooperative relationships and effective coordination
- Maximize flexibility and responsiveness
- A workforce development plan in place
- Pursue supplier-integrated product and process development

Looking Within the Enterprise – (What are my capabilities?)

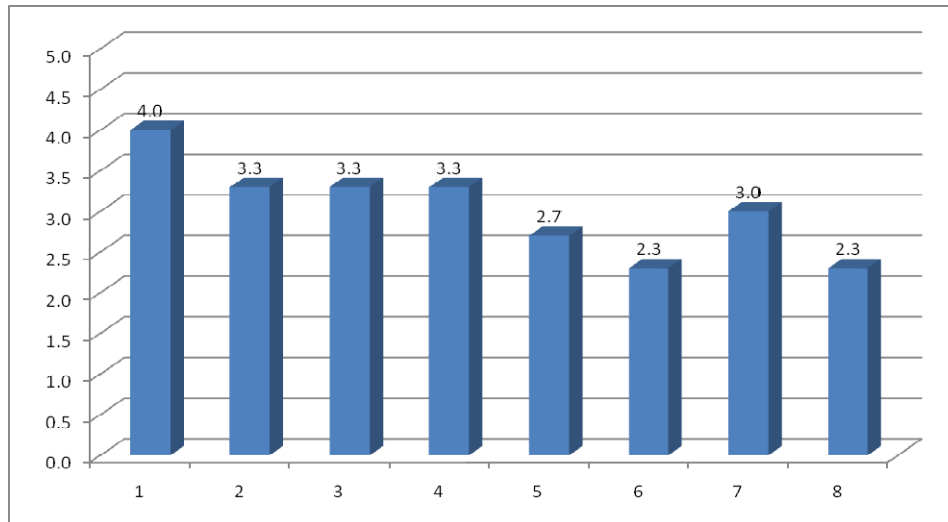
- A Culture of Improvement - Management commitment, Infrastructure
- Visual Workplace - Value Stream Mapping, 6S, Visual Controls
- Lean Product Development - DFMA, Flattened BOM
- Process Focus - Continuous Flow, Parts Presentation, Cellular Mfg, Right-sized equipment, Operator versatility
- Just In Time - Inventory Levels, Pull Systems, Load Leveling, Single Piece Flow, Set-up Time Reduction, Takt Time
- Control of Processes - Mistake Proofing, Six Sigma, Self-Verification, Root-Cause Analysis, TPM
- Standard Work - Defining, Cycle Time, Sequencing, Standard WIP
- Continual Improvement - Kaizen, Performance Measures, Quality Management System, Six-Sigma, SPC

Looking Downstream in the Supply Chain – (What do I need from my suppliers?)

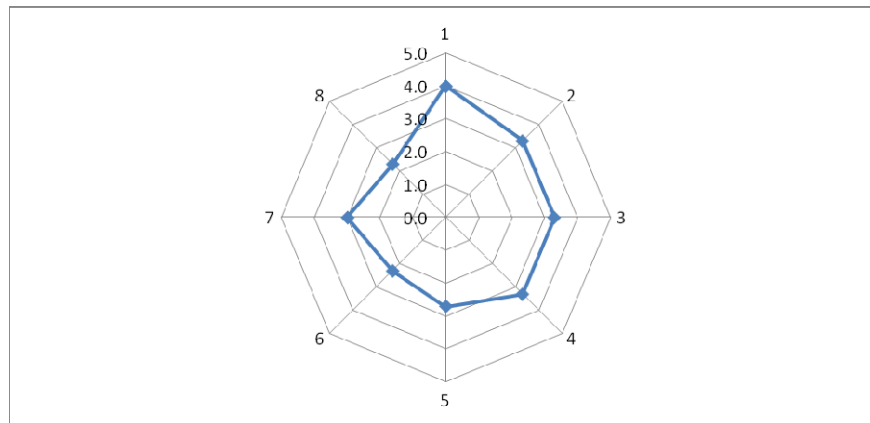
- Design of the supplier network architecture
- Development of complimentary supplier capabilities
- Creation of flow and pull throughout the supplier network
- Cooperative relationships and effective coordination throughout the supplier network
- Maximize flexibility and responsiveness
- Pursue supplier-integrated product and process development
- Integrate knowledge and foster innovation
- Demonstrate continuous performance improvement

Results of the assessments completed by Omega Precision will be used to structure additional training and provision of resources to continue the company's growth and strengthen their position in the Aerospace and Defense supply chain.

Results of the Supply Chain Management Self Assessment



1. DESIGN SUPPLIER NETWORK ARCHITECTURE
2. DEVELOP COMPLIMENTARY SUPPLIER CAPABILITIES
3. CREATE FLOW AND PULL THROUGHOUT THE SUPPLIER NETWORK
4. ESTABLISH COOPERATIVE RELATIONSHIPS AND EFFECTIVE COORDINATION
5. MAXIMIZE FLEXIBILITY AND RESPONSIVENESS
6. PURSUE SUPPLIER-INTEGRATED PRODUCT AND PROCESS DEVELOPMENT
7. INTEGRATE KNOWLEDGE AND FOSTER INNOVATION
8. DEMONSTRATE CONTINUOUS PERFORMANCE IMPROVEMENT



These are the areas in which Omega Precision needs to make the greatest effort to improve:

1. MAXIMIZE FLEXIBILITY AND RESPONSIVENESS
2. PURSUE SUPPLIER-INTEGRATED PRODUCT AND PROCESS DEVELOPMENT
3. INTEGRATE KNOWLEDGE AND FOSTER INNOVATION
4. DEMONSTRATE CONTINUOUS PERFORMANCE IMPROVEMENT

These are areas that Omega Precision is already working on and have shown measurable improvement:

1. DEVELOP COMPLIMENTARY SUPPLIER CAPABILITIES
2. CREATE FLOW AND PULL THROUGHOUT THE SUPPLIER NETWORK
3. ESTABLISH COOPERATIVE RELATIONSHIPS AND EFFECTIVE COORDINATION

This is the area that Omega Precision has done the most work in and is the most developed:

1. DESIGN SUPPLIER NETWORK ARCHITECTURE

Results of the CMTC Transformation Planner



The CMTC Transformation Planner gathers organization data, both financial and performance related, and conducts a benchmark comparison with a database of several thousand manufacturers across the United States. The benchmark data is stratified according to the organization's industry.



Figure A - Initial Evaluation

	Own Group:
	Aircraft/Aerospace suppliers %ile (100=Best)
Annual Revenue	
Purchased Material Labor & Overhead	
Cost of Goods Sold	
Operating Margins	51
Average Inventory	
Inventory Turns	17
Outside Services	
Utilities	67
Value-Added	
Scrap & Rework	5
Premium Freight	42
Average Receivables	
Days Receivables	95
On-Time Deliveries	50
Machine Hrs Available or Manned, Avg. per Machine per Year	
Machine Hrs Running, Avg. per Machine per Year	
Available Hrs % Year	38
Run Hrs % Available	64
Schedule Bumping	50
Annual Employee Turnover	95
Average Number	
Hourly Employees	
Salary Employees	
FTE	
Average Work Week (Hours)	
Average Hourly Pay	
Value-Added per FTE	43

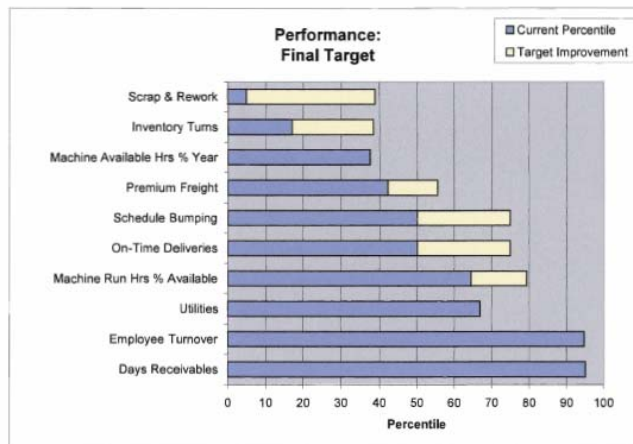
Proprietary Financial
Information Has Been
Obscured

Results are shown as a percentile rating in several areas. Improvement targets show the areas to be focused upon along with the amount of anticipated improvement.



Figure C - Opportunities

	Current Percentile	Target Percentile	Target Improvement
Days Receivables	95	95	0
Employee Turnover	95	95	0
Utilities	67	67	0
Machine Run Hrs % Available	64	79	15
On-Time Deliveries	50	75	25
Schedule Bumping	50	75	25
Premium Freight	42	56	13
Machine Available Hrs % Year	38	38	0
Inventory Turns	17	38	21
Scrap & Rework	5	39	34



The areas showing the greatest need for improvement are:

1. Scrap and rework
2. Inventory turns
3. Schedule bumping
4. On-time delivery
5. Machine run hours - % available

Continuing to Work on the Smart Supplier Requirements

The combination of areas of improvement identified in the assessments above defines the focus that will be worked on over the next year. This will give Omega Precision a continuing advantage in the development of shortened lead time and a diversified, reliable supply chain.

Additionally, CMTC will be working to simplify the Supply Chain Management Self Assessment to make it easier for suppliers to accurately rate their position on the maturity model scale.