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Employment Training Panel Outreach Plan

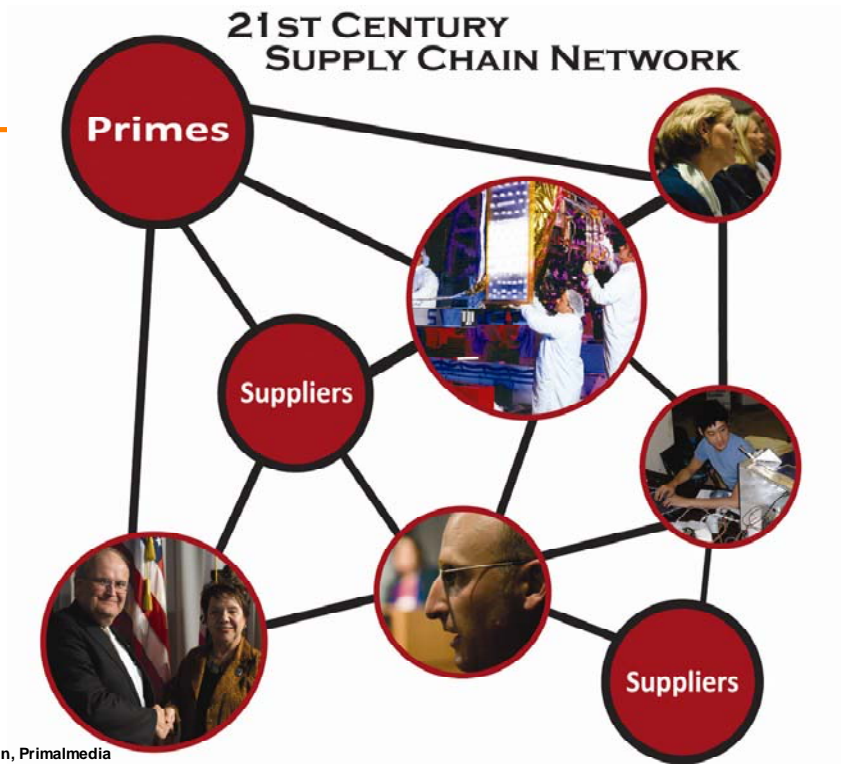


Image Designed by Wil Simon, Primalmedia



by Christine Purcell and Randall Echevarria, CSA

The Employment Training Panel Outreach Plan is a tool designed to assist with outreach and communications efforts. The Employment Training Panel Outreach Plan provides options for communications based on individual project, program, goals and/or metrics.



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1.0 Executive Summary

The Employment Training Panel Outreach Plan is a tool designed to assist with outreach and communications efforts. The Employment Training Panel Outreach Plan provides options for communications based on individual project, program, goals and/or metrics.

1.1 CSA Communications/Outreach Landscape

The landscape of modern communications is viewed in conjunction with CSA's current communication toolbox that includes the following:

- *Spacebound* – tabloid Newsletter, circulation 14,000-15,000
Major promotional tool used at conferences, symposiums, forums to display CSA range of activity.
- *Spotbeam* – email headliners, circulation 9,000-10,000
Headline news rendered without the use of HTML to give more access and circulation via emails. Submissions come from staff.
- CSA Media List – press releases, circulation 550
Directed primarily to parties that want to know about what CSA is doing and if there a newsworthy story to follow.
- Collateral Event Materials (brochures, fliers, etc.)
Numerous items designed to promote specific events.
- CSA & CSEWI web site
Primary portal for all matters related to CSA and CSEWI.
- California Innovation web site
Primary portal for all matters related to WIRED (still in construction). Work on Success Stories is from Richard Mains from Mains & Associates.

In addition, CSA's largest communication events are as follows:

- Space Day Sacramento (involving 65 or more participants and culminating in a reception attended by about 75-100 people)
- Space Week Washington, D.C., (involving 40-60 participants, numerous government speakers)



- CSA Transforming Space Conference (involving more than 400 attendees mostly from the space and aerospace industries with a dinner that draws about 325 attendees)
- CSA SpotBeam Annual Awards recognizing significant contribution to the space industry – includes a Space Manufacturing/Supply Chain category, attendance is up to 450.
- Supplier Events: CSA communication events and CSA participation specific to the space/aerospace supplier network include:
 - Annual Supplier Transformation Forums – unique in that these are inclusive of all primes, suppliers, programs and agencies; held at industry sites and include Transformation Successes panels of primes/supplier teams and a Resources panel that includes ETP program and application information, and successful case studies, results and unique approaches of how to use ETP funding productively.
 - 21st Century SCM class – onsite at industry locations
 - Lockheed Martin Company – outreach to 30+; Boeing – outreach to 30+
 - CSA Supplier Transformation Sessions and /or outreach at industry and agency Supplier events
 - Raytheon SAS Supplier Conference – outreach to 300+
 - NASA JPL High Tech Conferences – outreach to 500+ attendees at each of two conferences
 - NASA JPL Small Business Supplier Conference – outreach to 30+
 - Northrop Grumman Small Business Conference – outreach to 30+
 - Northrop Grumman Supplier Conference – outreach to 300+
 - Boeing Small Business Supplier Conference outreach to 30+
 - NASA Quality Leadership Conference outreach to 90+
 - CSA Annual Membership Meetings – outreach to 50+
 - CSA Strategic Advisory Executive Council meetings outreach to 40+
 - NDIA Gold Coast Small Business Conference outreach to 500+
 - Marketplace Small Business Conference co hosted by Northrop Grumman, Boeing, LMCO and Raytheon – outreach to 300+ at each of 3 conferences
 - USAF SMC Industry Days - outreach to 300+

1.2 Objective and Target Audiences

The objective of the Employment Training Panel Outreach Plan from 2007 through the end of 2008 is to raise awareness, build collaborative support and gain participation from California Space Enterprise in Employment Training Panel funding opportunities.



CSA & CSEWI target audiences are as follows:

- Aerospace
- Space Science
- Space related industries including:
 - Business/Telephony
 - Environmental Monitoring
 - Transportation
 - Navigation
 - Medicine
 - Entertainment
 - Agriculture
 - Energy Management
 - Education
 - Local Government
 - Space Exploration
 - Homeland Security
- Space Business Leaders
- Government Policy Makers
- Media Professionals
- Education Policy Makers
- College/University Students and Graduates
- New Space Professionals Working Group & Beyond
- General Consumers

The arrangement of the Employment Training Panel Outreach Plan is to convey the message that CSA & CSEWI have a built in mechanism of outreach and communication strategies.

1.3 Components and Projects

1. Employment Training Panel
 - 1.1. Supplier Forum
 - 1.2. Transforming Space Conference
 - 1.3. Los Angeles Venture Capital Collaboration
 - 1.4. JPL High Tech
 - 1.5. Northrop Grumman Small Business
 - 1.6. Raytheon Supplier Conference
 - 1.7. SMC Industry Days
 - 1.8. Northrop Grumman Supplier Conference
 - 1.9. California Space Day, Sacramento
 - 1.10. National Space Symposium
 - 1.11. Membership Solicitation Letters
 - 1.12. CSA Collaborative Process
 - 1.13. Stanford Innovation in Space and Aerospace Webinar Series
 - 1.14. CSA WIRED Aerospace Supplier Portal



2.0 Outreach Components

2.1 Employment Training Panel

The Employment Training Panel (ETP) is a business and labor supported state agency that assists employers in strengthening their competitive edge by providing funds to offset the costs of job skills training necessary to maintain high-performance workplaces. ETP is governed by an [8 member Panel](#); seven are appointed by the Governor and the Assembly and Senate leadership. The Secretary of Business, Transportation and Housing, or his/her designee, shall serve as ex officio, voting member.

2.2 Supplier Transformation Forum

The Supplier Transformation Forum will be the third of its kind, the second co-hosted by CSA and a prime contractor member company, with support from the U.S. Department of Labor's Workforce Innovation in Regional Economic Development grant. The forum will include participation from government agencies, primes and suppliers throughout the supply chain and specifically addresses the challenges and solutions facing major aerospace manufacturers in the 21st Century.

Forum content from the first Supplier Transformation Forum is summarized in the Supplier Innovation Initiative brochure which captures the 21st Century requirements, challenges, successes and resources facing aerospace suppliers. In addition, the Supplier Innovation Initiative brochure has a resource section that identifies more than a dozen different organizations that serve supplier interests, including some that can help identify training needs and training sources such as ETP. The Supplier Innovation Initiative brochure is available on the California Innovation Corridor website at www.innovatecalifornia.net/documents/Supplier-Innovtn-Initiative.pdf.

The Supplier Innovation Initiative brochure has been delivered to over 10,000 individuals from CSA's database of California Space Enterprise contacts.

The Supplier Innovation Initiative brochure will be available at the upcoming Supplier Transformation Forum with over 150 attendees from the aerospace supply chain.

An ETP representative will also be present at the upcoming Supplier Transformation Forum and may be participating as a guest on one of the panels.

2.3 Transforming Space Conference 2008

The California space enterprise community - industry, government and academia - continues to lead the United States as the nation transforms space in the civil, national security, and commercial sectors. This transformation is taking place in all three sectors in order to meet the nation's changing requirements to explore outer space, ensure access to space, transport space tourists, enhance launch and satellite responsiveness, and educate the future aerospace workforce.



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A conference will be held towards the end of the year in Los Angeles, the nation's hub for space enterprise. The conference will be held a short distance from LAX airport as well as from Air Force Space and Missile Systems Center (SMC), Jet Propulsion Laboratory (JPL), industry leaders (Boeing, Northrop Grumman, Raytheon) and world-class universities (CalTech, USC and UCLA).

Space professionals throughout the state and country who are integrally involved in the transformation of space enterprise will be attracted to the only state in the nation that has end-to-end space capabilities. Conference attendees will benefit through knowledge of the current business opportunities in all three space sectors (i.e., civil, commercial and national security), discussions of space policy and networking with California's space leaders.

We historically have over 300 guests in attendance each year. The ETP Outreach Flyer and ETP information will be placed in each of the conference bags.

2.4 Los Angeles Venture Capital Collaboration

Suppliers were invited to attend and /or exhibit a 3-day conference focused on entrepreneurship and innovation; with the ability to attend several workshops and meet with venture capitalists.

2.5 JPL High Tech

CSA hosted an information table on Supplier Transformation requirements and resources, including ETP, reaching 1000+ attendees.

2.6 Northrop Grumman Small Business

CSA was invited by Northrop to present on the Supplier Transformation Initiative and the ETP program to over 30 small suppliers.

2.7 Raytheon Supplier Conference

CSA was invited by Raytheon to present on the Supplier Transformation Initiative and the ETP program to over 300 strategic suppliers.

2.8 SMC Industry Days

SMC Industry Days is an annual event where industry is invited to learn about the current and upcoming programs at the Space and Missile Systems Center, focusing on business opportunities for the 350 aerospace professionals in attendance.

Space and Missile Systems Center:

The Space and Missile Systems Center (SMC) is the Air Force's premier space acquisition center. SMC's mission is to develop, demonstrate, acquire, field and sustain the world's best space and missile capabilities for the joint warfighter. Programs focus



on space force enhancements including communications, navigation and tracking satellites; space support including launch systems and satellite control networks; and force application. [SMC web site](#).

The Space and Missile Systems Center, a subordinate unit of the Air Force Space Command at Peterson Air Force Base, Colorado, is the center of technical excellence for researching, developing and purchasing military space systems.

The center is located at Los Angeles Air Force Base in El Segundo, CA, four miles south of Los Angeles International Airport. The center is also responsible for on-orbit check-out, testing, sustainability and maintenance of military satellite constellations and other Department of Defense space systems.

CSA has a booth at this conference and distributes information on ETP to all the conference attendees (approximately 350). In addition, CSA was included on the agenda to present the Supplier Transformation Initiative and ETP program.

2.9 Northrop Grumman Supplier Conference

Northrop invited CSA to present the Smart Supplier Initiative and ETP program to over 300 strategic suppliers.

2.10 California Space Day, Sacramento

California Space Day, Sacramento is CSA's annual lobby day at the California State Capitol. In the morning, Space Day participants come together to learn about our lobbying appointments for the afternoon. ETP will be included as part of our lobbying efforts to each member of the legislature. Approximately 140 flyers with ETP information will be delivered with an additional 60 participants receiving ETP information. The Supplier Innovation Initiative brochure will also be included in package we discuss with the California legislature.

2.11 National Space Symposium

The National Space Symposium is the premier U.S. space policy and program forum, an opportunity for information and interaction on all sectors of space -- civil, commercial, and national security.

NSS takes place on April 7-10, 2008, in Colorado Springs at The Broadmoor Hotel.

2.12 Membership Solicitation Letters

CSA is in the process of heavy recruiting for new California aerospace companies to join as members. With each membership package that has been sent out, we have included information on ETP and about our outreach initiative. To date over 100 membership packages have been sent out.



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2.13 CSA Collaborative Process

The Smart Supplier Initiative and ETP program were presented and gained input from 3 annual CSA California Space Industrial Base Vitality (CSIBV), Space Manufacturing (SMG) and Supply Chain Industry Advisory Group (SCIAG) meetings with attendance up to 40 at each meeting, and 3 annual Strategic Executive Advisory Council (SEAC) meetings.

2.14 Stanford Innovation in Space and Aerospace Webinar Series

Suppliers were invited to attend and submit submission to a two-semester Stanford course; all session are available at www.innovatecalifornia.net.

2.15 CSA WIRED Aerospace Supplier Portal

3000+ supplier profiles developed and posted, and ETP program outreach to 15,562 suppliers through the www.Connectory.com.



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



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- 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



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

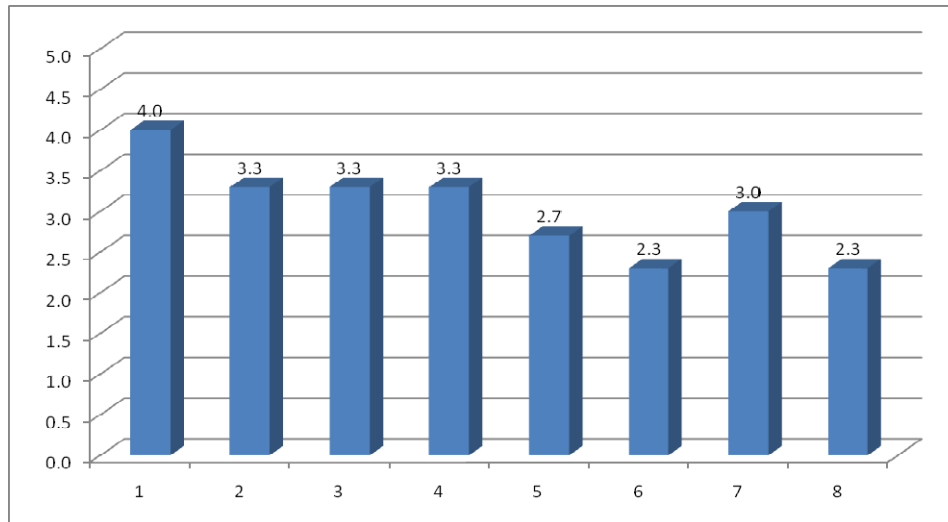
- A Culture of Improvement - Management commitment, Infrastructure
- Visual Workplace - Value Stream Mapping, 6S, Visual Controls
- Lean Product Development - DFMA, Flattened BOM
- Process Focus - Continuous Flow, Parts Presentation, Cellular Mfg, Right-sized equipment, Operator versatility
- Just In 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?)

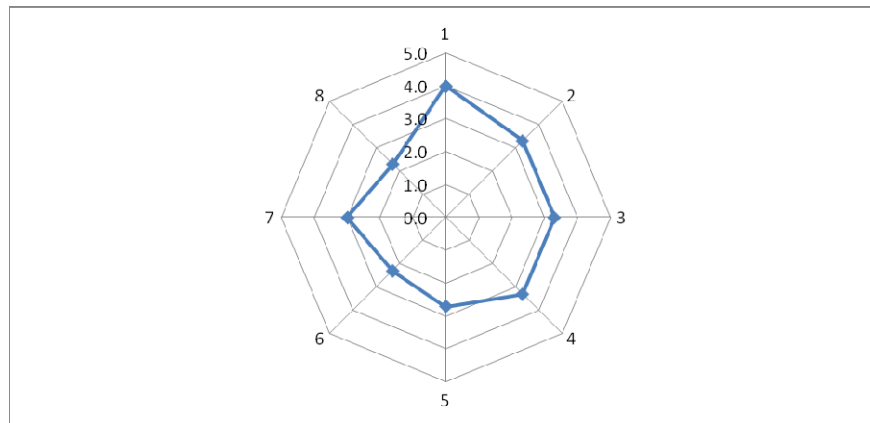
- Design of the supplier network architecture
- Development of complimentary supplier capabilities
- Creation of flow and pull throughout the supplier network
- Cooperative relationships and effective coordination throughout the supplier network
- Maximize flexibility and responsiveness
- Pursue supplier-integrated 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

Proprietary Financial Information Has Been Obscured

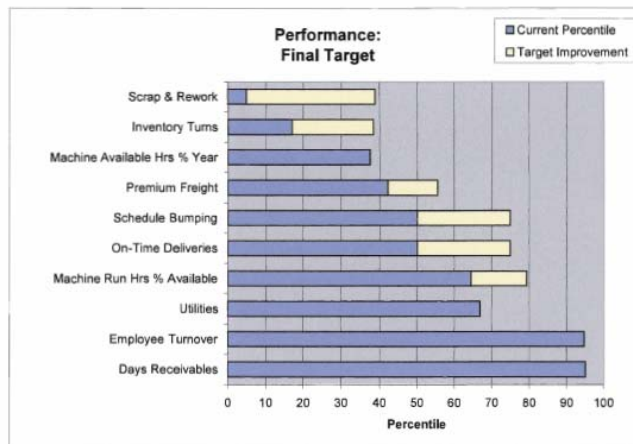
	Own Group:
	Aircraft/Aerospace suppliers %ile (100=Best)
Annual Revenue	
Purchased Material Labor & Overhead	
Cost of Goods Sold	
Operating Margins	51
Average Inventory	
Inventory Turns	17
Outside Services	
Utilities	67
Value-Added	
Scrap & Rework	5
Premium Freight	42
Average Receivables	
Days Receivables	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

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



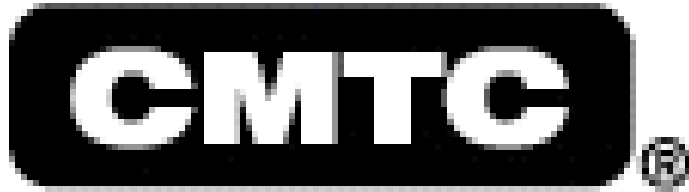
The areas showing the greatest need for improvement are:

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.



California Manufacturing Technology Consulting™

High Performance Results
- Improving Processes,
People, and Profits



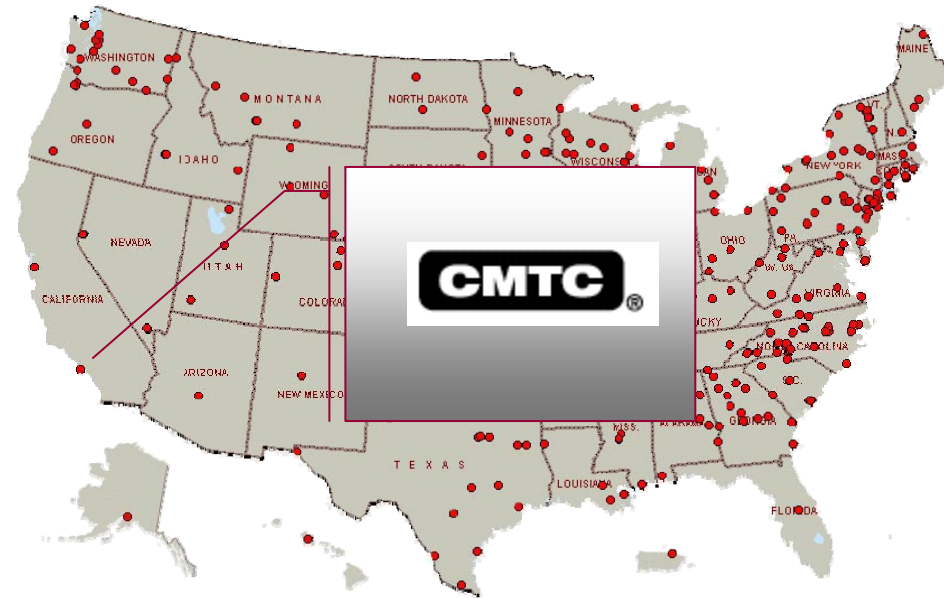
a NIST | Network
MEP | Affiliate





About CMTC & MEP

CMTC is the largest affiliate of the Manufacturing Extension Partnership (MEP), a program of the National Institute of Standards and Technology (NIST). NIST is an agency of the U.S. Department of Commerce Technology Administration.



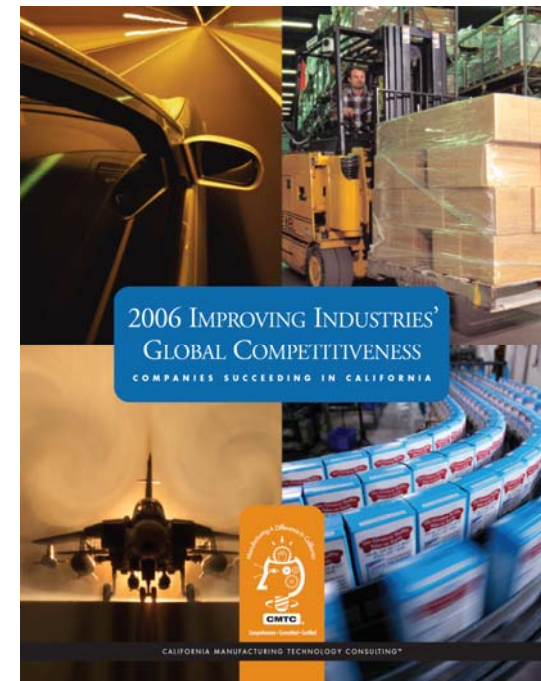
The MEP is a national network of affiliated centers and field offices staffed by experienced specialists serving all 50 states and Puerto Rico. Each provides expertise and services in transforming clients served to compete globally, supporting greater supply chain integration, and providing access to technology for improved productivity.

Affiliates leverage resources across the network to provide national support to clients.



About CMTC

- Process Improvement training and consulting - specializing in optimizing the people side of quality
- Private, nonprofit; approximately 100 full-time employees and 150+ qualified associates
- Established in 1992 as a charter affiliate of the national MEP program with a mission to strengthen U.S. commerce and improve U.S. global competitiveness
- Certified staff average 25 years of industry experience





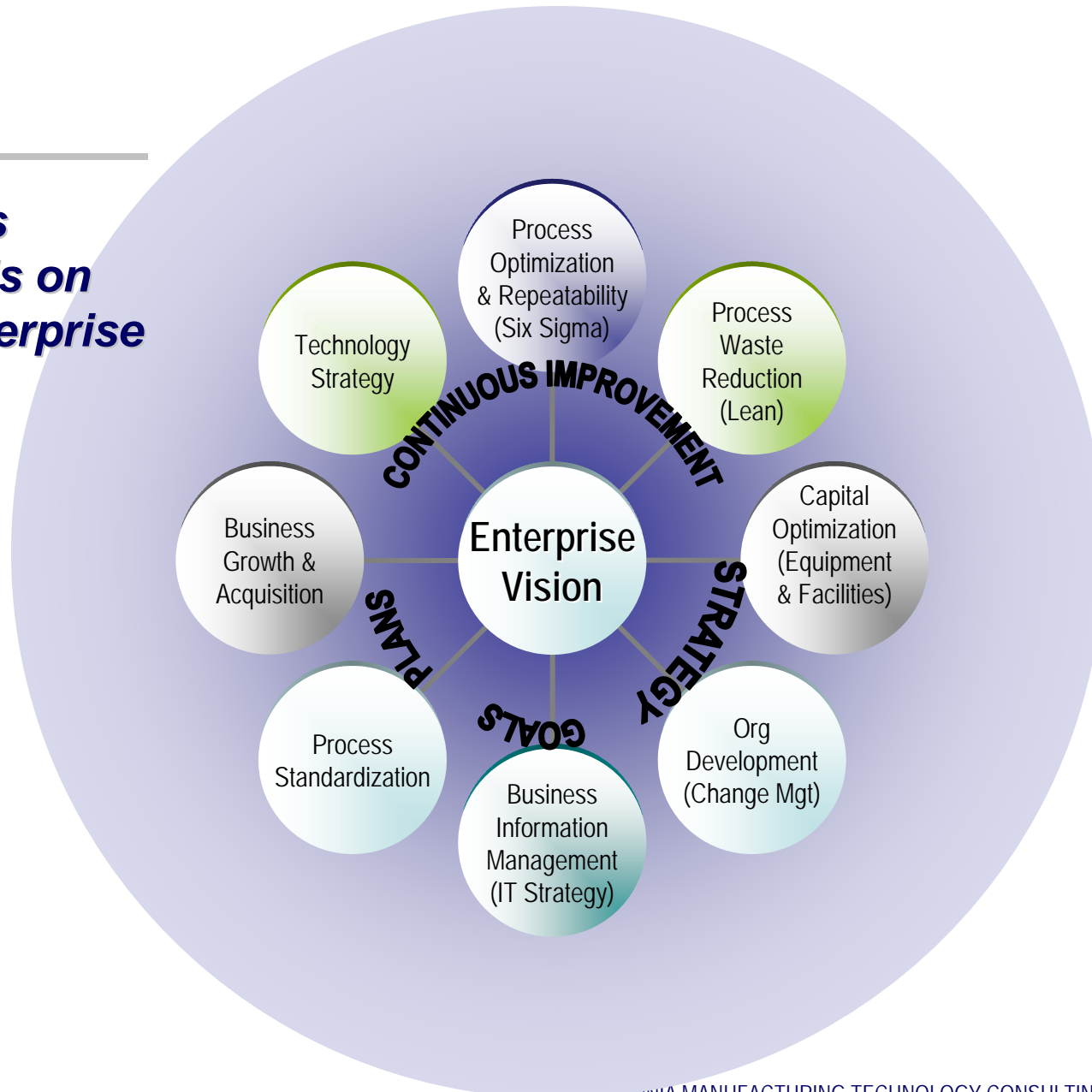
About CMTC's Aerospace & Defense Group

- Delivered services to over 800 A&D suppliers & OEMs since 1992 – more than any other consulting group. Over 5,200 employees trained.
- Aerospace Industries Association (AIA) Lead Organization / Chair of the Supplier Management Council
- Lean Aerospace Initiative (LAI) Supplier Networks Working Group
- California Space Authority (CSA) WIRED Grant, Funded Partner – SMART Supplier Requirements Development
- NASA Supplier Outreach Process Control (SOPC) Resource
- Approved subcontractor for Boeing Mentor-Protégé contracts through the U.S. Air Force





**CMTC's
Focus is on
the Enterprise
Vision**



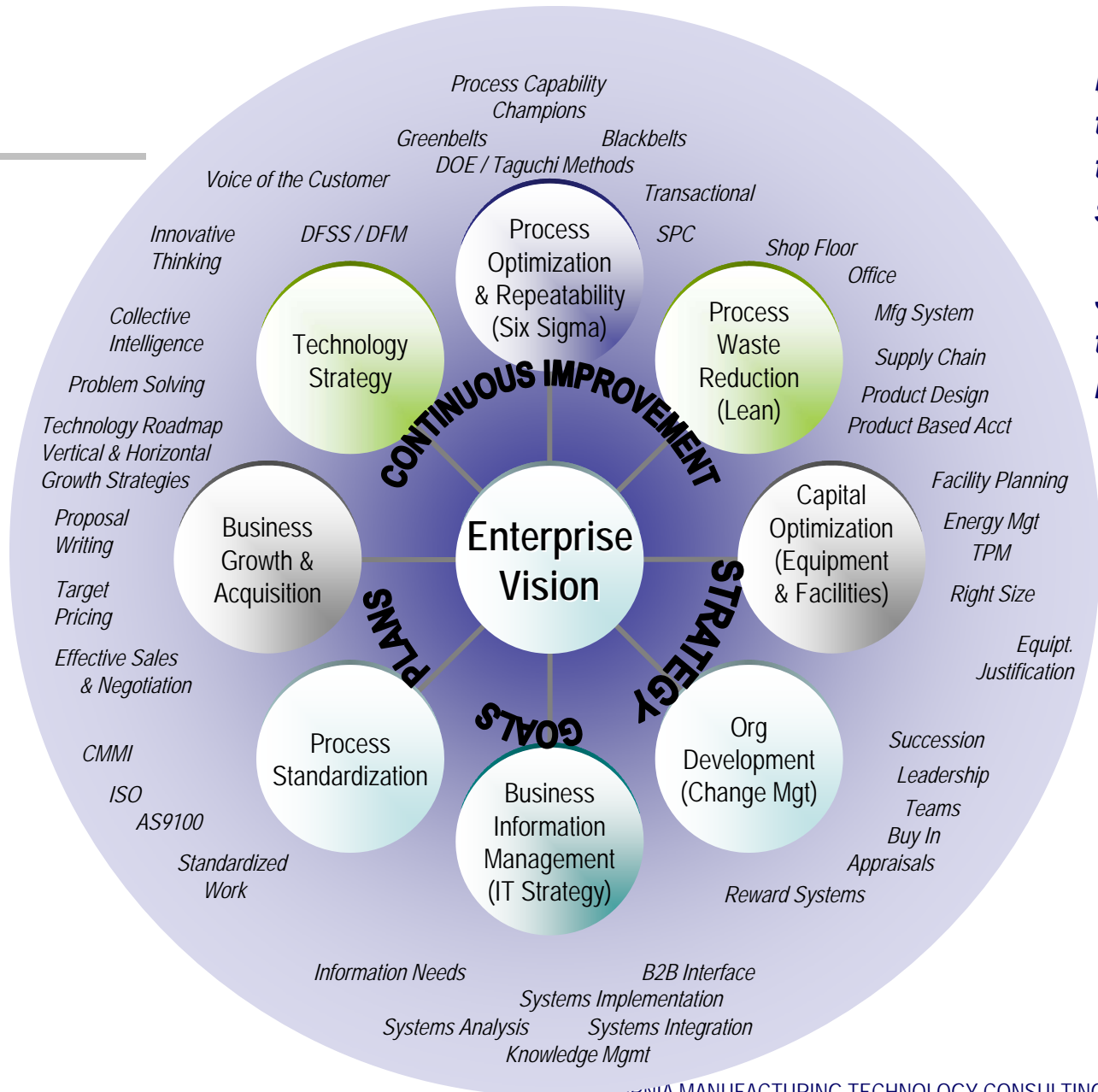
*Align Strategy,
Goals,
Planning, and
Continuous
Improvement
with the
Enterprise
Vision.*



Voice Of The Customer

Strategies and Goals Target Satisfying the Voice of the Customer (Internal/ External)





**Knowledge,
tools, &
technologies
support the
Value
Streams &
the
Enterprise
Vision**



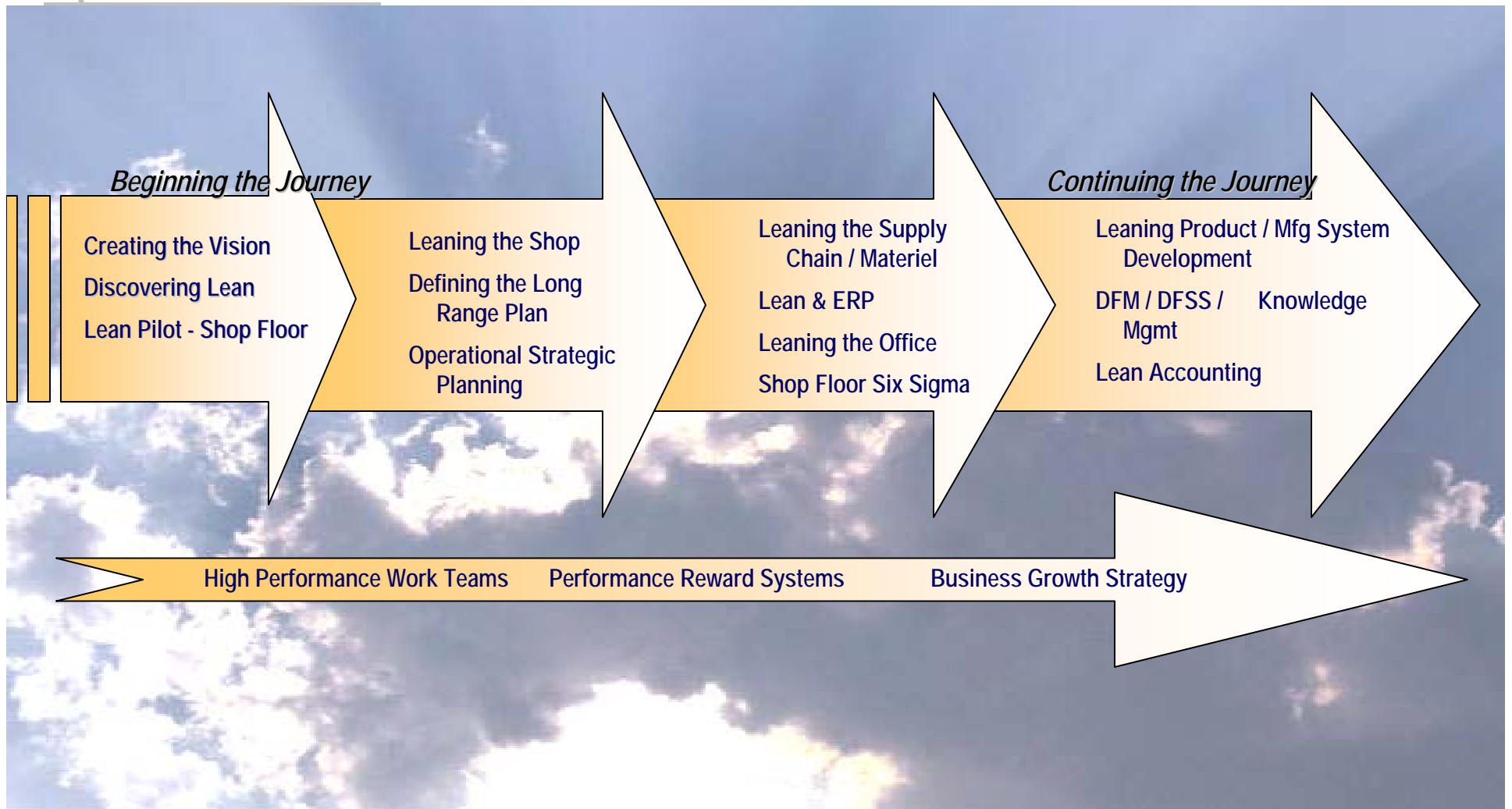
CMTC's Enterprise Capabilities

- **Lean Enterprise**
 - Transformation Management - Strategic Planning & Policy Deployment
 - Lean Office
 - Lean Product Development
 - Lean Manufacturing
 - Lean Supply Chain Management
- **Quality Management**
 - Repeatable Best Practices
 - ISO 9001; AS9100
 - EHS, ISO 14001
 - SPC
 - Six Sigma
- **High Performance Management**
 - Teams & Team Building
 - Problem Solving
 - Communications Skills
 - Leading Change
 - Management / Supervisory Skills
- **Information Technology**
 - Systems Selection, Implementation, & Optimization
- **Distribution & Logistics**
- **Energy Management**





CMTC Lean Enterprise Implementation Process Roadmap to World Class™





CMTC Client Impacts

Case Study 1

Aluminum Precision Products (APP)

- Located in Santa Ana, CA manufacturers of aluminum products for aerospace & other industries.
- Processes include: Forging, CNC Machining, Deburring, Washing
- Applied the following lean tools and techniques:
 - Lean Teams
 - Kaizen Events
 - Value Stream Mapping
 - Lean Cells
 - Continuous Flow
 - Batch Size Reduction
 - Set-up Reduction
 - 5S
 - Total Productive Maintenance
 - Transactional Lean (Lean in the office)



CMTC Client Impacts

Case Study 1 (Continued)

Aluminum Precision Products (APP)

- Results from implementation of Lean:
 - **Cell Implementation, Continuous Flow, Lot Size Reduction**
 - 25% - 50% Lead time and inventory reduction*
 - 50% Floor space reduction
 - 10% - 15% Productivity improvement*
 - **Set Up Reduction (Press)**
 - 50% Set Up time reduction
 - **TPM**
 - 50% OEE (Overall Equipment Efficiency Effectiveness) Improvement
 - Reduced Downtime, Increased Productivity, Reduced Defects / Scrap
 - **Lean Office Cell Implementation**
 - 90% Lead Time Reduction (Quoting)
 - 85% Lead Time Reduction (Order Entry)

- * Reflects a range of results from multiple Kaizens or improvements in more than one process/area.



CMTC Client Impacts

Case Study 2

Ceradyne, Inc.

- Located in Irvine, CA designers & manufacturers of advanced technical ceramics for defense, industrial, automotive, and commercial applications.
- Applied the following lean tools and techniques:
 - **5S + Safety (Workplace organization)**
 - **Standardized Work**
- Results from implementation of Lean:
 - 25% increase in productivity
 - 66% increase in sales
 - \$900K in cost savings, annually

“CMTC’s hands-on expertise & deep commitment to our success made a real contribution to significant increases in sales & productivity immediately following their support.” – Al Gerk, Director of Operations



CMTC Client Impacts

Case Study 3

Dante Valve Company, Inc.

- Located in Irvine, CA designers & manufacturers of advanced technical ceramics for defense, industrial, automotive, and commercial applications.
- Applied the following Lean tools and techniques:
 - **Value Stream Mapping**
 - **Lean Dashboard**
 - **5S + Safety (Workplace organization)**
 - **Set-up Reduction**
 - **Plant Layout**
 - **Kanban Implementation**
 - **Lean Scheduling System**



CMTC Client Impacts

Case Study 3

Dante Valve Company, Inc.

- Results from implementation of Lean:
 - **Value Stream Mapping, Kanban Implementation:**
 - 50% Lead Time Reduction
 - 50% Set Up Time Reduction
 - 40% increase in productivity
 - 66% increase in sales
 - \$900K in cost savings, annually

“We saw large cost savings, an increase in sales and productivity after working with CMTC to implement Lean techniques.” – Lisa Dante-Papini VP of Operations



CMTC Client Impacts

Case Study 4

Sierracin / Sylmar Corporation

- Sierracin / Sylmar Corp., located in Sylmar, manufactures aircraft transparencies for both military & commercial aircraft.
- Results from implementation of Lean:
 - **Cellular Manufacturing**
 - 37% decrease in processing time
 - \$93,600 annualized cost reduction for one product

“We eliminated a bottleneck that caused the placement of an on-site customer representative. CMTC helped us get on schedule and we saved a lot more than CMTC cost us. The customer and the representative went home happy.” -- Khushroo Lakdawala, Ph.D. VP Operations



CMTC Client Impacts Case Study 6 M.C. Gill Corporation

- M.C. Gill, in El Monte, CA, is the world's largest manufacturer of original equipment and replacement baggage compartment liners & lightweight composite sandwich panels used for flooring in passenger & freighter aircraft.
- Results from implementation of Lean:
 - **Design of Experiments**
 - 50% reduction in consumable costs in production

“We were able to see an annualized cost savings after working with CMTC.” - Paul Draghi, Director of Operations.



CMTC Engagements Partial Client List

Astro Aerospace/Northrop Grumman Space Technology	<i>Quality Systems Audit Inventory Management</i>
United Defense	<i>Lean Office – Earned Value Reporting</i>
General Atomics	<i>Lean & Workforce Development Services</i>
Sierracin Corporation	<i>Lean Enterprise Services</i>
Ceradyne, Inc.	<i>Lean Enterprise Services</i>
Aluminum Precision Products	<i>Energy Management Services Lean Enterprise – Office & Production</i>
Lockheed Martin - Palmdale	<i>Composites Training</i>
Dante Valve	<i>Lean Enterprise & IT Services</i>
Q-Tech Corporation	<i>Lean Enterprise Services – Lean Office</i>
M C Gill Corporation	<i>Lean Enterprise Services</i>
Smiths Aerospace (GE Aviation)	<i>Quality Management – ISO 14001</i>
JPL	<i>Information Technology Services</i>
L-3 Communications Ocean Systems	<i>Quality Management Services</i>



CMTC's Innovative Programs Benefit Clients, Suppliers, and Sponsors

- CMTC's Employment Training Panel (ETP) multiple-employer contract enables clients to access funding offsets for targeted projects and enterprise-wide programs. CMTC provides program management and administration on our \$2MM ETP contract.
- CMTC's award-winning VeSM© - Value Energy Stream Map – delivers energy efficiency for major energy users in California. Projects can be funded through California Public Utilities Commission grants through CMTC.
- California Enhanced Manufacturing Supply Chain (CEMSC) – Defense Logistical Agency (DLA) contract to support diminished manufactured parts for DoD.



CMTC Differentiators

- Scalable solutions
- Flexible engagement options
- Local, on-staff consultants
- 3rd-party verification of impacts & client satisfaction
- Funding offsets reduce clients' cost-shares for projects up-front
- Expertise in Lean Enterprise applications, Quality Management, Information Technology, Leadership / Organizational Development, Supply Chain Management, and Operator Skills (shop & office)
- Serving the Southern California market for 15 years with nationwide MEP collaborative support and deployment capacity

1. DESIGN SUPPLIER NETWORK ARCHITECTURE:

DEFINITION: Design the size, structure and composition of the supplier network to ensure the efficient creation and delivery of value to all enterprise stakeholders, focusing on the customer.

Diagnostic Questions

- Does the size, structure and composition of the supplier network reflect the enterprise vision and make-buy strategy?
- Does the design of the supplier network reflect a proactive effort to balance in-house capabilities with supplier-based core competencies to optimize the creation and delivery of best value?
- Are cross-functional commodity teams established for streamlining and selecting suppliers?
- Is supplier process capability measured and effectively utilized?

Lean Indicators

- Structure and composition of supplier network are linked to corporate vision and strategy.
- Make-buy and strategic sourcing decisions are firmly grounded in integrated set of criteria reflecting strategic corporate objectives.
- Supplier network strategy reflects a differentiated strategy designed to maximize value creation.
- Core competencies are aligned throughout the extended enterprise.

Potential Metrics

- Percent of direct suppliers selected on past performance or best value basis
- Ratio of total number of lower-tier suppliers to major suppliers
- Percent of direct purchase dollars placed to preferred or certified suppliers
- Percent of total end-product cost consisting of supplier-provided parts, components and materials
- Trends in the total unit cost of the enterprise's primary product (in constant dollars)
- Trends in the profitability of the supplier network (in constant dollars)

Key Enabling Practices

Capability Levels

Scores

LEVEL I TRADITIONAL	LEVEL II ADOPTER	LEVEL III PERFORMER	LEVEL IV REFORMER	LEVEL V TRANSFORMER	4.0
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1.1 Assure supplier strategy linked to corporate vision, goals and objectives

- There is little or no evidence of a supplier strategy linked to well-defined corporate vision, goals and objectives.
- Supplier strategy focuses mainly on reducing the cost of discrete procurement functions (e.g., order placement, invoicing, inventory management, materials handling).

- There is limited linking of supplier strategy to corporate vision, goals and objectives.
- Supplier strategy is seen as an enabler of improving cost and quality performance.
- There is very limited sharing of a common vision or commitment across suppliers.

- Supplier strategy is linked to corporate vision, goals and objectives.
- Supplier strategy is seen as an important enabler of improving competitive advantage.
- There is spotty sharing of vision and commitment across the supplier base.

- Supplier strategy directly reflects corporate vision, goals and objectives.
- Supplier strategy is seen as a crucial enabler of improving corporate competitive advantage.
- There is some shared vision and commitment across the supplier base.

- Supplier strategy represents a direct extension of corporate vision, goals and objectives.
- Supplier strategy is seen as a central core competence to enhance corporate competitive advantage.
- There is shared vision, goals and objectives throughout the supplier network.

4

1.2 Design supplier network based on strategic mapping of core competencies internally and across suppliers.

- The design of the supplier network does not reflect a strategic mapping of core competencies internally or across suppliers.
- Mapping of core competencies is confined to internal manufacturing processes.
- There is little congruence between internal and external supplier-based core competencies.
- The supplier network is characterized by a large number of direct production suppliers and a hierarchical structure with multi-tiered top-down control and management.

- Supplier network design reflects limited consideration of core competencies internally and across specific suppliers.
- Mapping of core competencies internally and across specific suppliers focuses on discrete manufacturing processes.
- There is limited congruence between internal and external supplier-based core competencies.
- Limited recognition is given to concurrent design of products, processes and supplier network

- Supplier network design reflects some consideration of internal and current (or required) core competencies of selected suppliers.
- Core competencies of selected technologies or manufacturing processes are documented.
- There is some congruence between current (or required) internal core competencies and those of selected suppliers.
- Some recognition is given to concurrent design of products, processes and supplier network.

- Supplier network design reflects an explicit consideration of current and required core competencies internally and across major critical suppliers.
- Internal and external core competencies of suppliers in key technologies are well defined.
- Core competencies internally and across suppliers are aligned.
- Recognition is given to concurrent design of products, processes and supplier network.
- Supplier network design is seen as an important enabler of corporate competitive advantage.

- Supplier network design reflects a proactive comprehensive strategic mapping of current and required core competencies internally and across the supplier network.
- Supplier network design strives to optimize portfolio of core competencies internally and throughout the supplier network.
- Products, processes and supplier network are designed concurrently.

4

<p>1.3 Select suppliers based on criteria optimizing core competencies internally and across suppliers .</p>	<ul style="list-style-type: none"> • Sourcing decisions are not linked to make-buy criteria based on evaluation of core competencies. • Supplier selection is based on a competitive, adversarial, process following a sequential multi-step procedure. • Suppliers are selected mostly on the basis of the lowest cost bid, reflecting the old maxim: "Three bids and a cloud of dust." • Multiple supplier sources are typically used for procurement of a given discrete item. • Supplier selection is made at the operating level, driven by lowest cost (price) considerations. 	<ul style="list-style-type: none"> • Sourcing decisions reflect make-buy criteria based on limited evaluation of core competencies. • Supplier selection is based on a competitive process weighing lowest cost bid and other criteria, where a relatively small percentage of contract awards are made on a past performance basis. • Multiple supplier sources are used for many discrete parts, along with selected use of dual sourcing and isolated use of sole sourcing. • Supplier selection is made at the facility or operating level focusing on reducing the cost of discrete purchased items. 	<ul style="list-style-type: none"> • Sourcing decisions reflect make-buy criteria based on evaluation of core competencies internally and across selected suppliers. • Some key suppliers are selected based on past performance and "best value," while a majority of suppliers of standardized items are selected using competitive bids. • Extensive multiple sourcing is used for highly standardized items, along with some dual sourcing and selected use of sole sourcing. • Dual sourcing is used for mature high-volume parts, while sole sourcing is used for selected complex high-technology specialty items. • Supplier selection is made by procurement organization, focused on reducing total program or product cost. 	<ul style="list-style-type: none"> • Sourcing decisions reflect make-buy criteria based on a thorough evaluation of core competencies internally and across major critical suppliers, focused on delivery of best value to the customer. • A relatively high number of major critical suppliers, and some subtler suppliers, are selected on the basis of past performance and "best value." • Multiple sourcing is used for standardized items, while dual sourcing is used for some technologically mature high-volume parts and sole sourcing is used for some complex high-technology components. • Supplier selection is made by enterprise -level cross-functional teams focused on delivering best lifecycle value to the customer. 	<ul style="list-style-type: none"> • Sourcing decisions reflect make-buy criteria based on a comprehensive evaluation of current and required core competencies internally and across suppliers, focused on creation of best lifecycle value for all stakeholders. • A majority of major critical suppliers and many subtler suppliers are selected on the basis of past perf. and "best value," focused on value creation. • Multiple sourcing is used for highly standardized items, while dual sourcing is used for selected technologically mature high-volume components, and sole sourcing is limited to selected complex high-technology subsystems. • Supplier selection is made by enterprise-level cross-functional teams focused on value creation for all stakeholders. 	<p>4</p>
<p>1.4 Segment suppliers into differentiated categories based on their relative strategic importance in creating value</p>	<ul style="list-style-type: none"> • Little evidence of an attempt to develop a differentiated procurement strategy. • Little or no effort made to segment suppliers into different categories, in terms of their relative importance and related criteria. 	<ul style="list-style-type: none"> • Limited effort is made to classify direct suppliers into different groups for the purpose of developing differentiated procurement strategies. • Supplier strategy is largely aimed at reducing transaction costs at program (product) level. • Direct suppliers grouped largely into such categories as major teaming partners and all others. 	<ul style="list-style-type: none"> • Direct suppliers are grouped into different categories for evolving differentiated procurement and supplier integration strategies. • Supplier strategy is aimed largely at reducing transaction costs at the business unit or enterprise level. • Supplier segmentation criteria consider a number of factors, such as relative economic importance and degree of criticality of procured items in terms of overall program (product) cost and performance 	<ul style="list-style-type: none"> • Direct suppliers are grouped into different categories on the basis of formalized supplier segmentation criteria for developing procurement and supplier integration strategies. • Supplier strategy is aimed at reducing internal and external coordination costs at the enterprise level. • Supplier stratification and segmentation criteria employ formalized methods considering such additional factors as transaction frequency and volume, and degree of complexity of purchased components. 	<ul style="list-style-type: none"> • Highly-differentiated supplier integration strategies and practices are implemented, based on formalized stratification and segmentation of the supplier network. • Supplier strategy is aimed at minimizing coordination costs and creating value. • Supplier stratification and segmentation criteria reflect such additional factors as mutual economic dependence and technology clockspeed. 	<p>4</p>

<p>1.5 Create internal organizational structures and basic infrastructure systems for efficient management of supplier network</p>	<ul style="list-style-type: none"> • Procurement is centralized into a materiel or purchasing organization supporting engineering and production operations. • One set of uniform processes and procedures govern procurement operations. • Procurement operations focus on discrete functions (e.g., order placement, inventory control, inspection procedures, materials handling). 	<ul style="list-style-type: none"> • Procurement is typically centralized at the enterprise level and serves as a service center supporting engineering, production and post-sale customer support functions. • There is limited integration between the procurement organization and engineering, manufacturing, quality, contracting and related functions. • Limited use of Electronic Data Interchange (EDI) focuses on routine exchange of business information with specific suppliers. 	<ul style="list-style-type: none"> • Procurement operations are typically centralized at the business unit level to achieve economies of scale in purchasing. • Matrixed relationships are established between procurement operations and key functional organizations (engineering, manufacturing, quality). • Basic EDI and related IT/IS infrastructure systems are developed to support enterprise's ERP system and to enable some capability for technical data exchange with selected. 	<ul style="list-style-type: none"> • Procurement operations (organized at the business unit level for large multi-divisional enterprises) are aligned internally and across major critical suppliers. • Matrixed relationships and incentives are put in place to align procurement operations across business units, programs (product platforms) and major critical suppliers. • Basic IT/IS infrastructure supports integrated ERP system, assures database commonality, and enables technical data exchange internally and across major critical suppliers. 	<ul style="list-style-type: none"> • Procurement operations (organized at the business unit level for large multi-divisional enterprises) are integrated internally and across the supplier network. • Matrixed relationships and incentives are created to integrate procurement operations across business units and programs (product platforms), as well as across the supplier network. • Basic IT/IS infrastructure systems are developed to ensure seamless information flow internally and across the supplier network. 	<p>4</p>
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Economic Impact of California Space Enterprise

California has been at the forefront of the space enterprise since the Space Age began a half-century ago. Businesses and government organizations based in the state play critical roles in commercial, civil, and national security space programs. California space enterprise generated over \$31 billion in direct revenue in 2007, giving the state a leading role in the national and global space economy.

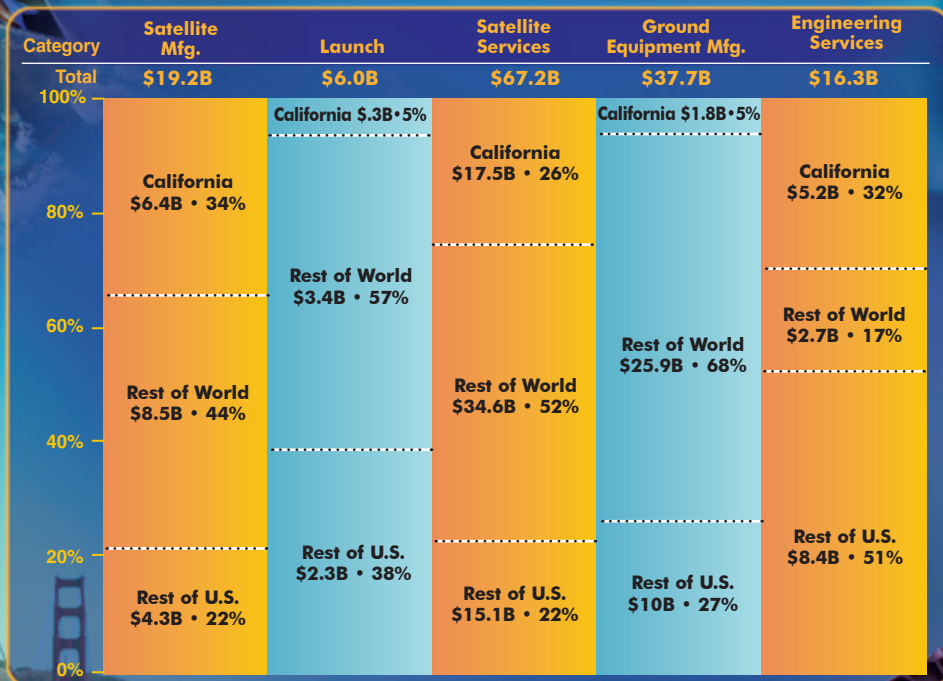


Space enterprise also plays an essential role in California's overall economy. California space enterprise had a total impact of over \$76 billion in 2007, and accounted for over 370,000 jobs in the state in a wide range of fields, from information technology and finance to manufacturing and health care. The continued growth of this industry is pivotal to the state's future prosperity.

Total Economic Impact of California Space Enterprise Exceeds \$76 Billion

Type of Impact	Satellite Mfg.	Launch	Satellite Services ¹	Ground Equipment Mfg. ²	Engineering Services	Total
Economic Activity	\$14.8tB	\$0.7B	\$44.5B	\$4.2B	\$12.4B	\$76.6B
Earnings	\$3.5B	\$.12B	\$11.4B	\$1.0B	\$3.3B	\$19.4B
Employment	62,542	3,277	232,622	17,811	55,145	371,397

California Space Enterprise Provides Over 370,000 Jobs and \$19.4 Billion in Wages



California Space Enterprise Represents 40% of the \$71.3B U.S. Space Market and 21% of the \$146B Global Space Market

¹ Satellite services includes direct-to-home television, mobile satellite phone, mobile satellite data, VSAT, direct internet, direct satellite radio, remote sensing (raw imagery and first order processing only), and transponder agreements.

² Ground equipment includes gateways, control stations, mobile terminals, VSATs, DBS dishes, handheld satellite phones, and satellite radio equipment.

California Space Enterprise Supports a Wealth of Space Services

Business/Telephony

- Digital voice, fax & paging
- High-speed data transfers
- Satellite internet
- Videoconferencing



Medicine

- Distance diagnosis
- Rural medicine
- Teaching & professional development
- Telemedicine



Entertainment

- Satellite digital audio radio
- Satellite direct-to-home television
- In-flight entertainment
- News
- Sports



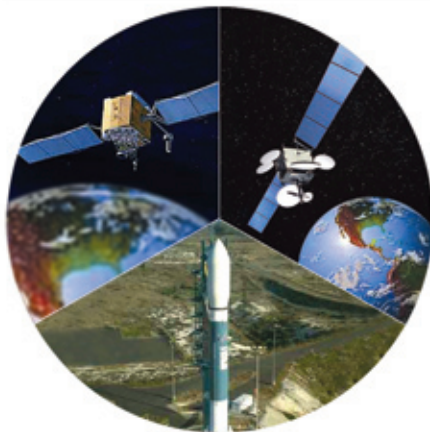
Agriculture

- Soil analysis
- Crop moisture sensing
- Pest infestation monitoring
- Herd management



Environmental Monitoring

- Reforestation
- Watershed & vegetation management
- River & stream control
- Air pollution management
- Weather/climate



Energy Management

- Oil pipeline monitoring
- Remote meter reading
- Infrastructure management
- Resource prospecting



Transportation

- Marine & land navigational services
- Rail management
- Infrastructure planning
- Logistics management
- Freight security



Education

- Distance learning
- Satellite-linked classrooms and schools
- Participatory "real-time science"

Navigation

- Land, sea, air and space navigational services



Local Government

- Flood & storm watches
- Forest fire prevention
- Disaster management
- Public safety
- Crime control
- Urban planning

National/Homeland Security

- Intelligence data delivery & collection systems
- Diverse database linkage

Space Exploration

- Robotic missions
- Planetary missions
- Future manned missions
- Astrobiology
- Flight testing

Governed by a statewide board of directors, the California Space Authority (CSA) is a nonprofit corporation representing the interests of California's diverse space enterprise community in all three domains: commercial, civil and national security.

Designated as the official Spaceport Authority for the state of California, CSA is a member-based "enterprise" association. Working closely with industry, government, workforce entities, and academia, CSA facilitates statewide space enterprise development.

California Space Authority



Administrative Office • 3201 Airpark Drive, Ste. 204, Santa Maria, CA 93455 • (805) 349-2633
 Capital Office • 1107 Ninth Street, Ste. 1005, Sacramento, CA 95814 • (916) 551-1543
 Los Angeles Office • 3858 Carson Street, Ste. 110, Torrance, CA 90503 • (310) 316-3271
 Pasadena Office • 150 East Colorado Blvd., Suite 302, Pasadena, CA 91105 • (626) 440-0565
 San Bernardino Office • 294 South Leland Norton Way, San Bernardino, Ste. 3, CA 92408 • (909) 382-7300
 San Diego Office • 1870 Cordell Court, Ste. 202, El Cajon, CA 92020 • (619) 562-3400