SEA SUPPLIER EXCELLENCE ALLIANCE

SUPPLIER IMPROVEMENT CASE STUDY

ELECTRONIC COMPONENTS SUPPLIER

This supplier is a manufacturer of electro-mechanical coaxial switches, switch matrices, and other microwave components. They produce switch product lines with over 10,000 unique configurations for the military, commercial, wireless, and Hi-Rel Space industries. At the time of this case study, the California-based supplier employed approximately 100 employees and occupied a single 40,000 square foot facility.

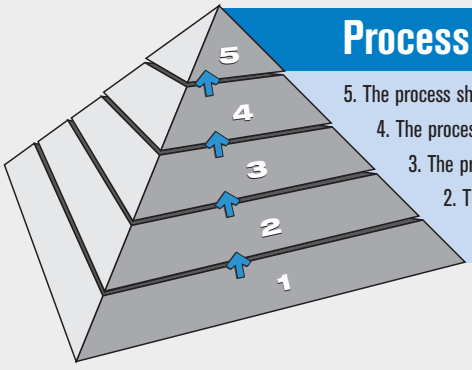
The SEA Lean Enterprise System

The SEA Lean Enterprise System captures the best practices for manufacturing enterprise improvement with a model with three key focus areas; leadership and culture, workforce development and operational excellence. The reason for these three areas is to emphasize the importance of a total organizational approach to managing the transformation. It also acknowledges that long-term sustainability of improvements relies on enterprise-wide solutions and well-managed change. Large-scale changes that do not address all three areas often fail. Implementations of lean that address all three take less effort and are more often successful.

Process Maturity Model (PMM)

The PMM was developed as an aid for companies who wanted to self-assess and consistently manage overall process improvement. Because the PMM serves as the backbone for all process improvement efforts whether lean, Six Sigma, or whatever comes next, it provides for long-term integration of all improvement approaches.

The Process Maturity Model™ is the central element of the SEA Lean Enterprise System.



Process Maturity Levels

5. The process shows continuous positive trends and benchmarks world class
4. The process is under process control, is analyzed, and improved using data
3. The process has certified trainers and is standardized
2. The process has been documented to the work instruction level
1. The process has been identified, defined, and has an owner

Leadership and Culture

In March and April of 2004, the supplier launched their lean planning activity by completing a four-day Management Planning Workshop. Twenty attendees, ranging from executive to middle management, participated in this foundational activity. Key outcomes included learning the SEA LES and development of a master plan for Engagement One implementation. The master plan enables leadership to own and lead the significant changes that will be made in the next six months. In addition, an initial stabilization audit was conducted, and will serve as a benchmark for subsequent reviews. Value stream-mapping exercises on key processes were also conducted.

On day four, the facilitators for the Managing Process Improvement and Workforce Development workshops delivered a brief overview and facilitated a discussion that helped the team link their improvement plans to the three tracks: Leadership and Culture, Workforce Development and Operational Excellence. In addition, the leadership team identified six Kaizen events and schedules were established for the Managing Process Improvement and Job Skills Development Workshops.

The Kaizen events selected were:
- Kanban
- Standard Planning Process
- Material Cost Reduction
- Prototype Design
- Item Master
- Receiving to Kitting

In May 2004, the Managing Process Improvement workshop was conducted with the executive and middle management team. This workshop provides the necessary foundation for leadership to effectively implement a lean enterprise culture and, subsequently, the ability to sustain results generated through the workforce development and operational excellence activities. Key outcomes include an updated company mission statement, supporting values and assessment, strategic goals, action plans, process ownership, balanced scorecard metrics, communication system, and understanding of the process maturity model.

Key processes were identified, PMM baseline levels ranging from 1 to 4 were established, and champions and process owners were assigned.

PROCESS	PROCESS MATURITY LEVEL
Request for Quote (RFQ)	3
Design Engineering	1
Planning	1
Order Entry	3
Procurement	3
Supply-Based Mgmt.	2
Receiving Inspection	3
Kitting	2
Customer Service/RMA	3
Engineering Change Order (ECO)	3
Invoicing	4
Tech. Problem Resolution	1
Production Folders	2

Workforce Development

In the Job Skills Training Objectives Workshop, the leadership team identified key company objectives and the training that would be needed to achieve these objectives. These objectives and identified training needs were then used in the next three Job Skills Workshops, which were completed in August and September: Advanced Planning, Master Trainer, and Training Materials. This supplier can now effectively train the applicable workforce in the following areas, which once completed, will elevate processes to a process maturity level 3:

- Buying (Negotiation Skills)
- Planning Process
- Item Master Maintenance
- Sales Order Entry
- Inv. Transactions using software
- Spot Welding
- Switch ADJ Process
- AS-9100 implementation focused training
- Implement Concurrent Engineering
- Implementing Sales Logics
- Kanban

Operational Excellence

This supplier completed six Kaizens from May to early October. Listed below are key accomplishments from each Kaizen.

Kaizen 1: Kanban
In late May, a ten-member team participated in a five- day event. They implemented a Kanban system on a high volume model production line. This implementation created immediate on-time delivery and volume improvements, along with increased inventory turns. In August, a volume record was set for most parts shipped in a month. Subsequently, other product lines are implementing the same Kanban system.

Kaizen 2: Standard Planning Process
In June, a second Kaizen was conducted to standardize the planning process and improve planner efficiency. Ten employees, including a process champion and process owner participated in this three-day event.

KEY METRICS FOR THIS PRODUCT LINE

Metric	Baseline	Post-Kaizen	% Change/ Dollars Saved
On-Time Delivery	59%	94%	35%
Inventory Turns	6.4	8.1	21%
Number of Past Due Units	630	0	100%

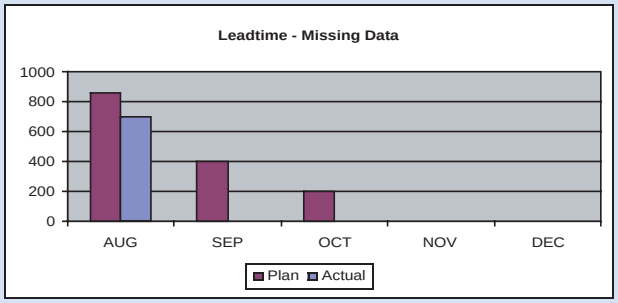
KEY METRICS

Metric	Baseline	Post-Kaizen	% Change/ Dollars Saved
Improve Kit On-Time	64%	86%	22%
Reduce Expedite Line Items	200	50	75%
Non Value Added Time (Planners)	70%	20%	50%

Kaizen 3: Material Cost Reduction Strategy
In late June, a nine- member team identified and focused on material cost reduction for their top ten suppliers and BOM (Bills of Material) cost reductions. With new procurement strategies, cost negotiation activities, and engineering designs in place, they have been able to reduce cost by 13% over a four- month period. Their target is 23% for the year.

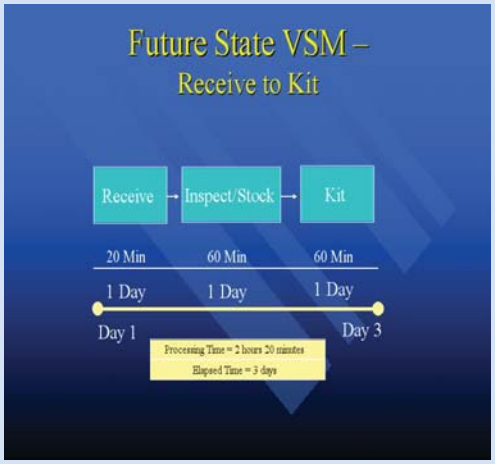
Kaizen #4: Prototype design cycle time reduction and standardization
In late July, a 12-member team improved the prototype design process to minimize cycle time and errors, along with streamlining communication. Targeted results are to reduce the cycle time from 12 days to 4. Current cycle time is at 10 days.

Kaizen 5: Item Master Development and Maintenance
In late August, a three-day Kaizen consisting of nine team members focused on "leaning" the planning system. To date, all missing lead-time data has been eliminated. (see below).



Kaizen 6; Receiving thru Kitting
In early October, the sixth Kaizen event focused on the Receiving through the Kitting Process. Thirteen employees participated in this 3-day event focusing on reducing the amount of time it takes for parts to be received, inspected, stocked, pulled into kits, and issued to the floor. The team reduced total cycle time from 8 days to 3 days, a dramatic improvement that will ultimately improve kit on time delivery, reduce inventory costs, and improve overall On-Time-Delivery. Most of this cycle time reduction was focused on an inventory queue that was taking 3-4 days to process.

Operational Excellence Cont.



Summary:
This supplier is effectively implementing all three tracks of the SEA Lean Enterprise System. Moving forward, they continue to further mature their processes, and improve key organizational metrics.

KAIZEN	BENEFITS
Kaizen 1 - Kanban	OTD has improved on line by 35%
Kaizen 2 - Planning	Kit on time improved by 75%
Kaizen 3 - Material Cost Reduction	13% cost reduction to date, 23% targeted for year
Kaizen 4 - Prototype Design	Cycle time initially reduced by 17%
Kaizen 5 - Item Master	Part with blank lead-time 837, now 0
Kaizen 6 - Receiving Thru Kitting	Reduced cycle time by 63%