

Briefing Paper - Supplier Excellence Alliance

The Supplier Excellence Alliance (SEA) is an alliance of leading aerospace, defense and space prime contractors whose purpose is to accelerate the development of supply chain capabilities. It is organized as a 501(c)(6) for mutual benefit non-profit.

Mission

Accelerate Supply Chain Performance

Advisory Board Members

- Alderman & Company
- BAE Systems
- EADS North America
- Firth Rixson
- Goodrich
- Northrop Grumman
- Roberts Tool Company
- Rockwell Collins
- Rolls Royce
- Sargent Controls

Supplier Advisory Committee

- Barry Controls Defense & Industry
- Esterline Kirkhill Elastomers
- Micropac Industries
- Midwest Metal Products
- Perfekta
- Photo Etch
- Roberts Tool Company
- Synchronous Aerospace
- W Machine Works

Focus

- SEA is an unprecedented aerospace and defense alliance led by sub-tier suppliers committed to accelerating supply chain performance.
- SEA provides a proven turnkey system for supplier development targeted to mid-tier aerospace and defense customers.
- SEA provides an industry voice for suppliers on issues affecting supply chain performance.
- SEA provides a platform for supplier visibility, performance improvement and collaboration.
- SEA plays a key role in communicating on developments affecting the industry.
- SEA is funded by supplier memberships and sponsorships

Key Relationships

- ❑ Aerospace Industry Association
- ❑ California Council for Excellence
- ❑ Lean Aerospace Institute
- ❑ National Institute of Standards & Technology / Manufacturing Extension Partnership
- ❑ State Government
- ❑ SME – Society of Manufacturing Engineers
- ❑ UAW-Labor Employment Training Corporation
- ❑ USMCOC – US Mexico Chamber of Commerce

Value to Suppliers...SEA Provides...

- An supplier-approved management system for accelerating business performance and growth
- A high level of visibility to current and prospective customers
- Industry recognition for suppliers making improvements
- Opportunities to network and collaborate with other suppliers leading to integrated high-performance supply chains

Value to Customers...SEA Provides...

- A proven process for encouraging and promoting supplier self-investment that improves performance and creates industry leadership
- A process for identifying high performance, lead suppliers
- A way to leverage customer resources making it possible for customers to touch more suppliers with fewer resources
- Opportunities for collaboration between suppliers and customers
- Opportunities for integrated supply chain solutions
- A more realistic strategy for implementing moving production lines and speeding up supply chains with lower risk

Value to End-Customers...SEA Provides...

- Higher quality, more reliable products
- Lower cost products
- Products delivered faster to the marketplace

Burning Platform Issues

→ Supplier Lean Progress is Too Slow

Using the reference of inventory turns, we know that the entire industry has not made significant progress toward a leaner business system model. Supplier capabilities are often 2-3 turns and barely more than 80% on-time delivery. The SEA pilot with a broad cross-section of supplier sizes and commodities has proven that supplier process maturity is at a very low level for very critical business and production processes. Smaller suppliers lack the requisite maturity to participate in more advanced Demand-Driven Supplier Networks for collaboration on point-of-use and kitting approaches. Cumulative lead times across a supply chain remain very high and out of range for today's requirements. At the current state of maturity, most suppliers will go out of business trying to meet the cost goals that are inevitable as the industry matures. It's not that suppliers aren't improving. It's just that the rate of improvement is too slow.

→ Moving Up the Value Chain

When a supplier can't derive enough margin from current programs, they reduce their investment in strategic capabilities. This slows progress toward moving up the value chain. Demands in our industry are cyclic. When they go down, suppliers reduce capacity, layoff, and delay investment in new capabilities. When demand is on the rise, suppliers find themselves under capacity, hiring just brings new quality problems, with longer lead times, and failing on-time delivery. The DoD refers to this effect as the "hollowing out of the supply chain." In order to increase investment in strategic capabilities, the supplier must reduce costs faster than demands from the marketplace and be able to afford investment especially when downward cycles occur. Accelerated lean progress and a strategic plan to develop additional "value-added" capabilities are essential to survival. Many suppliers in our pilot program suffer from this vicious cycle.

→ Large Scale Integrator Strategy

For all of the reasons cited above, the primes strategy to source up to 80% of new programs to the supply chain is in jeopardy. As production lines speed up to reduce working capital requirements and reduce overall cost, the supply chain is not prepared to respond on a consistent basis. The new supply chain must respond with 100% on-time delivery and zero PPM quality on very low "ship set" volumes of parts and kits that are "point-of-use" ready and delivered to the production line. Tier One suppliers must take on more risk and a bigger share of design while using their supply chains in turn to share design risk and value-added production. Tier One and Two suppliers must have a much more robust and mature supplier partnering capability. Again, at the current level of maturity, our supply chains are not prepared to support our large-scale integrator strategy.

→ The Cost of Time

In many industries or commodities, time is becoming more valuable. When an aircraft traveled down a production line in slow increments for a total of 20-40 weeks, a 90-day lead-time for a part or a one-day slippage in delivery didn't make a big difference – it could be tolerated. In a production line that continuously moves an aircraft through a three-day production cycle, a one-hour slippage in parts delivery that is intended for point-of-use can stop production. Saving 10 cents on a part cannot offset the cost of stopping a production line when it isn't delivered. But traditional solutions to this problem are to establish inventory levels. This is no longer a cost-effective solution in the new supply chain. Outsourcing a part or process to another country with labor rates that are one-tenth of the U.S. average may seem to be a significant advantage until we realize that labor might be 5-10% of the total cost of the part. Meanwhile a highly volatile supply chain can be more costly than any labor savings that can be realized. A supplier who can deliver 100% on-time with zero PPM quality (six sigma) and

a very low lead time is desirable especially if they are located within a short distance. Time will continue to increase in its value driving procurement decisions toward more reliable supply chain solutions.

→ Moving from Horizontal to Vertical Supply Chains

We cannot hope to improve a few suppliers in a multi-tiered network and improve the overall performance of the supply chain. In the new supply chain, overall supply chain performance is more important than individual supplier performance. Said another way, making an “A+” player out of a few suppliers in the chain while others are still “C” suppliers, cannot ensure the future competitiveness of an OEM who is sourcing 80% of the value of a product to the supply chain. And offloading supply chain management to a Tier One may be a good strategy, but it may simply obscure problems only to have them resurface later. The health and capability of the supply chain is of primary importance to every prime/OEM whether the supplier is two tiers down or not. Failure to ensure a healthy supply chain can cost trillions over a number of years. In our low volume/high mix industry, supplier capability to respond to pull signals with very low lead and cycle times is the key ingredient to success. In the near future, designing the high performance supply chain will be a core competency when ramping up a new program. Suppliers who are not capable of performing at Phase 2 of the SEA LES, will not be viable as a participant in this new “designed” supply chain. We need to think about how we can structure our supplier networks so that everyone can win and share in the profits of achieving higher levels of *combined* performance.

→ Crossfire

We function in a reality that “lean manufacturing” is a commodity that can be delivered by almost any qualified resource. When McDonald’s starts up a new location, do they tell the managers to go out and get themselves trained at any reputable management school? If the manager has an MBA, do they allow the manager to bypass the McDonald’s University Management training? No, they don’t. Why? Because how you function in a McDonald’s is not a commodity that can be delivered by anyone. It is a specific step-by-step methodology of proven best practices for success that do not leave the success of a new manager to chance.

When Toyota starts up a new operation, do they bring in outside companies to provide lean training to their production workers? No, they don’t. They train everyone in the Toyota Production System – managers, workers, everyone.

Why wouldn’t an industry with specific needs and requirements and a supply chain that needs to work like a well-oiled machine, adopt a standard business and production system across its entire network?

We call the delivery of 20 different versions of lean the “Crossfire” problem. Suppliers call it much worse. Primes and industry resources perpetuate it together. Each prime visits suppliers and teaches their own version of lean providing their own version of lean tools. Primes contract with MEPs who deliver their own version of lean and lean implementation tools. A successful supplier may do business with 10 different customers – all of these offer assistance that is slightly different. The management team of an average supplier spends many hours trying to figure out a course of action that keeps their customers happy and yet reconciles and defines a path that can meet the needs and requirements of many different customers with widely varying quality systems, specifications, and production requirements. This problem is so pervasive that fully 30% of all suppliers invited to learn more about the SEA pilot refuse to even attend a short briefing – even when they know that the program will be funded by the state.

Meanwhile what we all want is for the supplier to accelerate their improvement. We fail to realize that the supplier network is a shared resource and we cannot hope to achieve this goal by providing 20 different versions of “help.” The point of view that suppliers “belong” to a particular prime is the single greatest contributing factor to the “Crossfire” problem. The point of view that lean is a commodity that can be purchased from anyone is a close second.

SEA Game Plan

SEA’s strategy is simple and elegant. It relies on the natural pressures discussed above and the natural tendencies already existing in the aerospace market.

SEA offers mid-tier customers an opportunity to have a supplier management and development system they do not have. Large companies often have whole departments for supplier management and supplier development, but mid-tier market customers with spend levels of \$50M to \$250M or more, do not have the formal systems that a prime would have. These mid-tier customers contract with hundreds and even thousands of suppliers and yet lack the formal system to measure, qualify, and monitor supplier performance. For these customers, participation in SEA is free and with no obligation. We make it as easy as possible for them to take advantage of a supplier-funded system that achieves a number of important goals for them.

Meanwhile, suppliers often find that even though they invest in lean improvements, this alone does not bring the visibility needed to increase market share. It’s important when lean improvements have been made that you capture more business as a result of those “organic increases in capacity.” Combining our efforts in a collaborative effort allows us to establish the SEA Supplier brand, a name that stands for excellence. Suppliers who really can and do make the investment to improve performance can be associated with this brand and thereby become known as the top 5% of their field.

Building visibility in a combined efforts is much more doable than any one supplier working alone. SEA’s combined efforts for industry visibility are formidable and result in new business opportunities for SEA suppliers every day. In order to strengthen our strategy we simply need to drive supplier memberships and build a substantial industry footprint.

Strategic Initiatives

→ SEA Lean Enterprise System

Over the past seven years, 24 prime and tier one companies, over 20 consultants, and hundreds of aerospace suppliers have participated in the development and refinement of the SEA Lean Enterprise System “LES.” The LES consists of the Roadmap, the Process Maturity Model, and many examples of successful implementation.

Each quarter, suppliers submit the SEA Quarterly Report and that report is examined by a trained SEA examiner and feedback is provided to the supplier. Successful submission of the Quarterly Report earns suppliers the “Engaged” status on the SEA Supplier Registry. Engaged suppliers are normally working towards SEA Certification with a typical timeframe of 12-18 months.

→ SEA Certification

A three-day onsite audit uses the Roadmap as the basis for auditing. An independent auditor conducts the SEA Certification Audit once every two years with a two-day surveillance audit conducted annually. The Auditor uses a standard process designed and controlled by SEA to insure standardized and repeatable outcomes. SEA Suppliers have 60 days to correct noted discrepancies before the certification can be granted.

- **Authorized Service Provider**
Independent consultants submit to a training and certification process where a SEA Industry Practice Leader trains and then monitors performance. ASPs are located across the U.S. and deliver services on-site at the supplier's location.
- **Supplier Registry**
Suppliers who successfully meet the requirements of the Quarterly Reporting Process are classified as "Engaged" status and may be included on the Supplier Registry. Certified SEA Suppliers have a premiere position on the Registry. The Registry is featured on the SEA website and on the SEA "Blue Pages" publication.
- **Supply Chain Awards**
The awards process begins with nominations. Suppliers and other nominees must submit an application. Applications are forwarded to a panel of independent judges. Finalists are named in advance by the judges and these finalists attend the November awards event. Seven winners are announced on the night of the event. Winners are asked to speak at event throughout the following year and present awards to suppliers in subsequent years.
- **Benchmark Site Visits**
Suppliers that achieve SEA Certification typically have outstanding metric performance. These suppliers host site visits for customers and suppliers.
- **CEO Conferences**
Three times each year, SEA Suppliers invite non-member suppliers and customers to a conference to provide a progress report called "Supplier Keynotes" and to stage a summit discussion on key issues affecting supply chain performance.
- **Outreach**
Board of Advisor members participate in the planning and implementation of SEA's site visit and conference plans and schedules.
- **Supplier Advisory Council**
Suppliers who have substantially completed Stage One of the Roadmap may apply for membership in the Supplier Advisory Council. SAC suppliers serve as conference speakers and host site visitors.
- **Customer Involvement**
Customers benefit from SEA's various programs by extending their supplier development effort at no cost. Customers may choose to participate in the Board of Advisors, Outreach, Awards, and Benchmark Site Visits programs. SEA targets mid-tier market tier one and two customers because we know that the prime and tier one founders are committed to moving business down the supply chain and those companies in the mid-market will become our primary customers. There is never any obligation for customers who participate in SEA.
- **Supplier Ambassadors/Speakers**
Supplier CEO who belong the Supplier Advisory Council are available to speak about SEA to supplier and purchasing audiences either assembled by SEA or by SEA customers. SAC members specialize in telling their story to other supplier CEOs and senior officers. Their stories motivate action.