Abstract. As the global business environment changes, businesses have to adapt in order to stay competitive. This is particularly true in the aerospace business, no matter what size the company is. For large companies, such as Boeing, true change requires a leadership-focused approach throughout the enterprise, because of the sheer size and complexity of running the business to meet today’s commitments, as well as future strategies for growth.

A large part of Boeing’s value chain is made up of suppliers. To adapt in a changing environment to meet and exceed our customers’ needs, Boeing and its suppliers have to continuously improve the way the business is run. Boeing has developed a supplier engagement model that involves several approaches based on the strategic importance of suppliers and their ability to improve by themselves. Understanding and deploying Lean principles is at the heart of this improvement.

Environment of Improvement. The environment we live in today for selling products and services to our customers is dramatically different from what it used to be. Advances in technology and the rate of change have increased to the point that to stay competitive in the marketplace companies have to be constantly improving how they run their business and what they offer. Boeing has taken it upon itself to not only aggressively improve how it operates internally, but also how the entire value chain, which includes suppliers, improves. By taking a global perspective, working with and partnering with suppliers and customers throughout the value chain, everyone benefits.

Boeing looks at Lean as a continuous concept. It never ends, as there are always more improvements to be made. Some of the attributes associated with Lean include:

- A best practice – the best-known method of accomplishing a task that can be replicated to other areas to also increase efficiency.
- A set of tools – different processes require different tools to reach an optimum level of performance; Lean provides those.
- A method to unite people into teams to achieve goals that could not be achieved individually.
- A means to increase competitiveness and profits, and grow the business.

The ultimate goal in any business is to create a continuous improvement Lean culture. This does not happen overnight. It is an evolution that starts with education and awareness that things can be improved. This is followed by learning how to improve and actually making sustained improvements. Once the basic Lean principles have been learned and successes start spreading along the value chain, true benefits can be measured at the business level, where it really counts. The pinnacle of a Lean culture is a learning organization in which the leaders are teachers and mentors, improvements are part of the daily activity, and self-directed teams have the authority to not only say “what if”, but move forward to validate their ideas.
**Strategy and Lean Objectives.** The Boeing objective for working with strategic suppliers is creating and enhancing long-lasting partnerships. The intent is not only to align strategies, but also share the benefits and the risks of being innovative and successful. Focusing on improving using Lean principles can lead to increased capacity, capability and market share, which in turn lead to the achievement of goals that were once thought beyond reach.

To support suppliers, a Lean Engagement Model has been created that involves three different engagement approaches based on the strategic importance of suppliers and their ability to self improve:

- If a supplier ranks higher on the strategic scale and can self improve, Boeing will work with the supplier to align strategies and focus on improving processes between the two companies. By doing so, higher efficiencies can be reached than by either company working by itself.
- If a supplier is strategic but cannot self improve, Boeing will work with the supplier to identify and address the gaps that are preventing self improvement.
- If a supplier does not rank high on the strategic scale and can not self improve, Boeing uses the services of external Lean consultants to help that supplier reach that self improvement plateau. The Supplier Excellence Alliance (SEA) and the Manufacturing Extension Partnerships (MEP) are two organizations that provide Lean and skill-enhancement support when needed.

Depending on the type of supplier and focus of the engagement, support may include business vision, strategy and goal alignment; plan and process improvements; and training and certification in Lean tool and methods. Other areas of support may include enhancements in the areas of information technology, quality systems, machining solutions, or even how to handle hazardous materials. Workforce skill development may focus on new technology, new materials, or how to assembly parts for a supplier that is ready to move into a higher level of subassembly.

**The Subtier Supplier.** As Boeing evolves as a large scale integrator, versus a fabricator or assembler of smaller components, the role of the supplier also changes. The supplier must now not only understand what is important to run their business within their facility so that they can continually improve, but also must take their Lean knowledge and work with their sub-tiers to drive improvements in those operations. This requires enhancing communications, sharing best practices, managing risk and working together to create a smooth-flowing value chain that will ultimately benefit everyone. We must all move from acting as independent companies in a supply chain to well-managed, collaborative companies working together for the good of the whole.

**Summary.** Any business must continually improve to be competitive in a changing marketplace. A well-thought strategy is essential when it comes to aligning the value chain to provide the best value to the customer. Boeing is accelerating its global improvement effort by supporting its suppliers through the implementation of Lean principles. To remain viable in the future and for optimum success, all parties in the value chain need to work with and support one another.