

Supply-side solutions



Andy Kershaw of MB Aerospace attaches fins to the aft body of a Harpoon capsule. Following Boeing-facilitated accelerated improvement workshops, MB Aerospace was able to improve the efficiency of this assembly process.
MB AEROSPACE PHOTO

Suppliers are critical to Boeing. Here's what Boeing is doing to help partners be more efficient —and to ensure they're meeting expectations

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Stronger links

How suppliers learn to live Lean, thanks to Boeing's assistance

By AMY HORTON

At Boeing, suppliers account for the majority of the product cost. So it makes sense that if the company can help its partners be more efficient, both parties are better positioned to meet customer needs and capture new business.

That's exactly what's taking place. Boeing is replicating its productivity improvements—not only in its own operations, but in those of its suppliers. That improves the competitiveness of both Boeing and its partners.

"In order to satisfy our customers and stay in front of the competition, we have to reduce cost and improve efficiency throughout the value stream. That takes pushing ourselves as well as maximizing the potential of our global suppliers," said Ron Shelley, vice president and leader of the company's Global Sourcing initiative. "We can drive growth for Boeing—and for our supplier partners—through increased productivity."

Over time, the number of Boeing suppliers is expected to drop as the company focuses on working with its highest-performing partners. Developing and enhancing those relationships will continue to provide innovative, best-of-industry, best-value solutions.

Toward that end, Boeing is sharing some of its most successful strategies with suppliers through a variety of activities. Among them: conducting Lean workshops and conferences, dedicating executives to support key supplier relationships, and partnering with and securing grants for Manufacturing Extension Partnerships across the United States to help develop small- and medium-size suppliers.

"Our suppliers are an extension of our factory, so working together with them to meet high standards for quality, productivity and efficiency is more important than ever," said Steve Schaffer, vice president and general manager of Global Partners, Boeing Commercial Airplanes, and enterprise functional leader of Supplier Management within Engineering, Operations & Technology.

Among the suppliers that have recognized the value of working with Boeing—and its own supply base—to drive Lean is Yokohama Rubber Company, the provider for the 737 common lavatory and potable water tanks for the 737, 747, 767 and 777 airplanes.

YRC's Lean journey began in 1999 with its need to reduce costs and meet contract commitments for lavatories on the 757. After

identifying hundreds of areas where Boeing, YRC or their suppliers were affecting production flow, YRC cut the number of labor hours needed to assemble 757 lavatories at its Hiratsuka, Japan, plant by more than 50 percent.

As the 757 program phased out, YRC wanted to become a supplier for other Boeing programs. That's when Cliff Bristol, a supplier development specialist in the BCA Global Partners Lean Promotion Office, began working closely with YRC. By that time, YRC had established a 737 Kaizen Promotion Office, with a Lean leader and a few full-time staff members ("kaizen" is a Lean term that refers to continuous improvement).

Bristol and the YRC Lean experts applied learning from the 757 lavatory process improvements as they established a new line for 737 lavatory production. They examined old 757 tooling and came up with a significantly smaller set of tools for 737 production. They also implemented parts supermarkets, which ensure the right number of parts are available when needed and replenished as they are used.

The result: Rather than having to add space to accommodate the 737 lavatory production process, they were able to reduce space by 30 percent. YRC, which now uses a moving line for final lavatory assembly, also integrated one of its subcontractors into its facility to make the process even more seamless.

"Before that, there was a 30-minute drive between the facilities, and panels were delivered in batches that weren't always in sync with YRC's production cycle," Bristol explained. "By integrating the processes, YRC was able to reduce cost and improve efficiency."

SUPPLYING LEAN

One way Integrated Defense Systems ensures continuous improvement across the value stream is through its Supplier Partnership Initiative, which establishes long-term engagements with strategic partners—such as MB Aerospace, whose Harpoon capsule assembly site is in Burnley, England—for Lean development. "The key to successful Lean implementation at MB Aerospace," said Eddie Butt, supply chain manager at MB Aerospace, "was in identifying it as a necessity, not an option, for our business strategy."

The results include improvements in manufacturing areas at both individual and team levels:

- Identifying common tooling used in the production of 127 parts, reducing the number of tooling kits required from 127 to 17
- Reducing machined ring lead time from 39 days to 3.5 days
- Reducing the assembly and alignment of rails into the Harpoon launch system from 20 hours to 11 hours

The Supplier Partnership Initiative Lean engagement program includes education and training so key suppliers can apply Lean practices in their own operations and flow it to their supply base. "In doing so, they create a culture and build an infrastructure to drive continuous improvement," said Donnita Bennett, manager of the Supplier Partnership Initiative.

That's what happened for MB Aerospace.

"We had planned a tour of key suppliers to enlist their support in our Lean journey and the Supplier Partnership Initiative," Butt explained. "We were a little wary of the reaction we would get, but we got a really positive reaction from the very first visits. We were able to work through our needs and the suppliers' processes."

LEAN+ IN ACTION

Driving Lean+ both deeper into factories—and into offices—is a practice Shared Services Group has applied in its work with



Software House International, a software distributor and maintenance clearinghouse for Boeing.

Through value-stream-mapping sessions, SHI and the SSG Information Technology procurement group identified a number of opportunities to improve the process for verifying and renewing software maintenance licenses.

Among the areas that saw improvement was the software maintenance ordering process. SHI was supposed to notify Boeing 90 days before a software maintenance package had to be renewed. However, incomplete data in the order history often prevented the notification from being efficiently processed on Boeing's end, which meant renewal periods expired before Boeing IT could respond.

"This could mean a systems engineer would be left without access to job-critical software, sitting idle until the license was renewed," said Celeste Lee, SHI Global Account director and vice president. "It could also mean added expense, because Boeing would have to buy the software anew, rather than paying the lower cost for a renewal."

SHI and Boeing corrected the problem by creating a common software maintenance renewal form for all Boeing IT software purchases, ensuring all the necessary data was captured at the point of purchase. Then, when software maintenance came up for

renewal, both companies had the necessary data to ensure smooth processing.

CREATING A CULTURE

While Boeing and its suppliers celebrate their successes, they are keenly aware of the possibilities still ahead.

"Lean takes constant attention," said BCA's Bristol. "If you get comfortable, then you probably aren't pushing improvement enough."

To sustain its momentum for continuous improvement, MB Aerospace includes Lean workshops, cost and cycle-time reduction targets and supplier engagements in its business plan, Butt said. And YRC has transitioned from its 737 Kaizen Promotion Office to a team of Lean experts who focus on continuous improvement for all parts of its company.

Dan Korte, IDS vice president of Supplier Management & Procurement, said he's encouraged by suppliers who are establishing a Lean culture.

"Once you begin doing Lean, it becomes no different than getting up and making the pot of coffee in the morning. It just becomes part of the fabric of our daily existence. And that's exactly what we're looking for," he said. ■

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Measuring up

Boeing enhances partner performance assessment tools

By DEBBY ARKELL

To ensure Boeing suppliers are performing at the highest levels, the companywide Global Sourcing growth and productivity initiative requires better ways to measure supplier performance on levels beyond traditional quality, delivery, customer satisfaction and affordability ratings.

Those powerful measurement tools arrive this month.

Boeing has long had processes and tools to measure supplier performance. Since the year 2000, one such tool, the Supplier Performance Measurement Report, has provided a snapshot of the overall health of the supply base and generated data for tracking

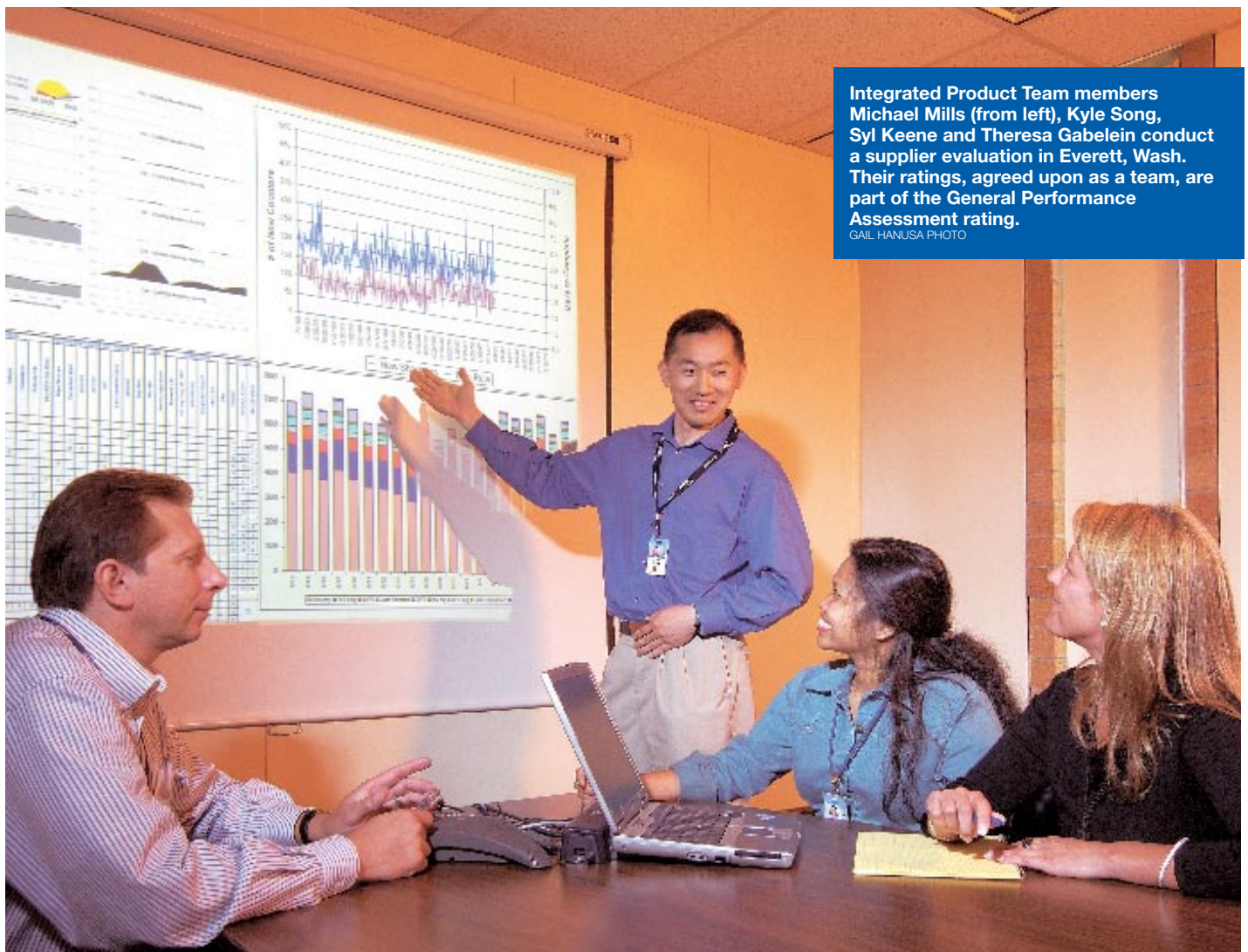
performance improvements, providing feedback to individual suppliers, and guiding decisions about where to place business.

But Boeing's relationship with its suppliers has evolved over the past seven years. The Boeing Enterprise Supplier Management Team realized that performance metrics needed to evolve as well. The upgrade to the supplier measurement system will close the gap.

"This tool, developed by the Supplier Management function, streamlines our process for effectively—and uniformly—measuring the performance of our partners," said Ron Shelley, vice president of Global Sourcing. "That's important as we sharpen our focus on first-time quality and drive long-term, systemic improvements to make Boeing and our suppliers more competitive in the marketplace."

Instead of following a one-size-fits-all approach, the new system introduces new assessment options to support four distinct Boeing business models:

- Production, such as raw material and parts suppliers
- Development, including research and concept development suppliers
- Support services, which includes providers of spares, modifications and retrofits, training, and product support



Integrated Product Team members Michael Mills (from left), Kyle Song, Syl Keene and Theresa Gabelein conduct a supplier evaluation in Everett, Wash. Their ratings, agreed upon as a team, are part of the General Performance Assessment rating.

GAIL HANUSA PHOTO

■ FEATURE STORY

- Shared services, such as information technology procurement, employee financial services and site services suppliers

“The enhancements will allow us to measure down to the level of a supplier’s business practices and give a clearer, better view of Boeing’s complete supply base,” said Kirsten Parks, Supplier Performance Process leader. “Boeing can check with suppliers to ensure they have the appropriate management systems and quality management systems to meet our needs, and not just measure whether parts arrive on time and are good quality.”

Existing customer satisfaction and affordability categories are being combined into a “General Performance Assessment” category, under which each type of supplier can be rated on technical factors, schedule, cost, quality performance and more, as determined by the supplier’s business model.

Consider the Developmental Supplier Assessment Measure tool, which is scheduled to roll out formally this month after a year of testing. “With DSAM, Boeing will now be able to rate a supplier on its progress throughout a developmental program, where currently this type of supplier is only evaluated upon delivery of the end product,” said Sandy Poole, Supplier Program Manager and Enterprise DSAM team leader. “Developing a tool to help us gain early and ongoing visibility into problems or poor performance can help us better manage our business.”

For example, an IDS supplier may provide production parts for the C-17 and be a supplier to Boeing on a three-year development program, delivering a single item at the end. The old supplier performance measurement system would only score the supplier on the quality and delivery of finished products, but it had no way to track that supplier’s performance on the development contract.

Northrop Grumman, a supplier on the P-8A Poseidon aircraft, is one company that used the new DSAM during its test. Bob Broton, Northrop Grumman program director for the P-8A sensor suite, said the DSAM tool is “a major communication tool” to help Boeing and suppliers better understand each other’s perceptions.

“It forces to the table differences we may have in how we perceive our performance,” he said. “The tool standardizes the criteria by which we’re rated, provides stronger definitions and ultimately fosters dialog with Boeing about the rationale behind performance assessments. It’s a much stronger, more valuable tool for us.”

Similar tools have been created for evaluating shared services and support services suppliers. Suppliers such as Dell are eager for those tailored measurement tools. Up until now only its production performance metrics, such as the quality and on-time delivery of hardware, were tracked. Boeing had no way to track, measure and score the significant technical support they provide.

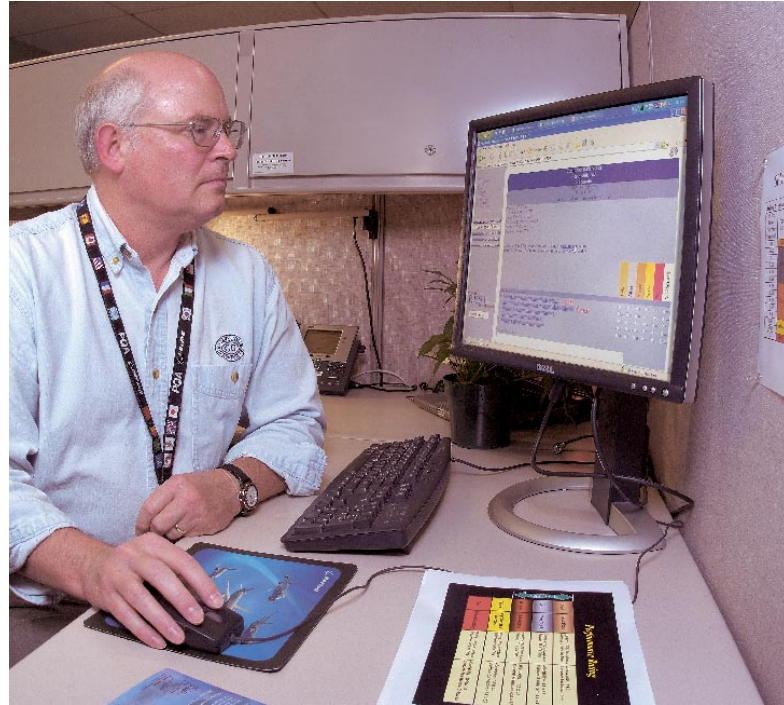
ONE-COMPANY APPROACH

The enhancements to the Supplier Performance Measurement Report let Boeing take an enterprise approach to gathering and applying supplier performance data.

For example, many programs have created separate tools to measure developmental suppliers’ performance. But once DSAM makes its debut, all developmental programs will use the same tool and the same criteria.

“There were multiple tools within IDS, all rating suppliers in different ways,” Poole said. “Now there is one consistent tool to be used across the enterprise, and the tool is no longer program-specific. Data can be shared enterprisewide, and programs at Boeing can compare notes.”

The new assessment tools will foster communications between Boeing and the suppliers about their performance, Parks said. “The data, combined with regular communication, enables Boeing



Greg Filzen, a procurement agent for Commercial Airplanes Global Partners, conducts a supplier performance evaluation at his work station in Everett, Wash. Filzen works with other procurement agents as part of a cross-business unit effort to align processes that relate to Boeing supplier Goodrich.

GAIL HANUSA PHOTO

to clearly express expectations and work together with suppliers along the way to make improvements. This improved approach to measuring supplier performance truly helps strengthen Boeing and supplier partnerships,” he said.

“There is great value in Boeing having one face to our supply base with a consistent performance measurement process and one language within Boeing and across our supply base,” said Tom Peterson, director of Supplier Management and Boeing Supplier Management Performance Team leader. “We are enabling our suppliers to focus on execution to plan—and providing common measurement standards across Boeing.” ■

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A new way of scoring

In addition to the new supplier performance measurement tools, the manner in which suppliers receive their overall composite score also will change, ultimately affording a more accurate look at a supplier’s total performance.

Currently scores in areas such as cost, schedule, customer satisfaction and quality are based on the lowest rating among five categories. When the new tools come online this month, the supplier will receive a composite score that is more indicative of the suppliers’ overall performance. There are three performance categories in the composite score: quality, delivery and the new General Performance Assessment.