

# Boeing Global Services optimizes their immense service parts network with state-of-the-art technology

The innovative solution helps an industry leader meet demanding inventory needs and keep customer satisfaction a top priority

In the aerospace and defense industry, taking a mission-critical approach means expecting the unexpected. But with aircraft comprised of hundreds of thousands of parts, being prepared with the right parts, at the right place, at the right time—with speed and accuracy, no less—is no small feat. Learn how one A&D leader reimaged their service parts supply chain with help from a longstanding partnership and state-of-the-art technology.

## Boeing has a long tradition of aerospace leadership and innovation

If you've ever flown on a plane, studied military aircraft, or even just stared at the stars, you've probably seen Boeing's work in action. Boeing is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space, and security systems, as well as a leading provider of aftermarket support.

One of the key tenets of Boeing's long-held industry success is service. Boeing Global Services (BGS), a dedicated service business, focuses on the aftermarket needs of global defense, space, and commercial customers. Headquartered near Dallas, Texas, BGS employs 23,500 people at more than 300 facilities across 70 countries.





From engineering and supply chain management to training services and customer support, BGS leverages innovation and state-of-the-art technologies to keep its customers' aircrafts operating at high efficiency and provide mission assurance for nations around the world.

### **The defense industry requires rapid service and parts replacement**

It goes without saying that in defense, aircraft availability and operational excellence is crucial—but achieving the highest marks here doesn't come without challenges. BGS fully supports programs like the United States Air Force C-17 and F-22 and the Army APACHE. These

programs require equipment availability and operational excellence with zero compromise. "Our aftermarket service contracts are customer-specific and tuned to their spare part availability needs," says Debbie Belmer, Senior Manager, Supply Chain Enablement at BGS. "It's crucial that we have the right parts in the right warehouse at the right time to support our customers' mission-critical operations."

Meeting this high service bar for each and every customer is challenging—and made even more difficult by the exceeding complexity of the aerospace supply chain. First, defense customers need aircraft in top condition in order to respond to highly variable situations such as natural disasters

and escalation conflicts, which can come with little to no warning. What's more, there is a massive volume of unique parts with unique sources of supply. This creates additional challenges for managing numerous aircraft models, each comprised of hundreds of thousands of parts.

Also common are long lead times for parts replacement, especially for rare parts—some of which take more than a year to procure, potentially grounding aircraft and causing huge financial loss. Aging aircraft also present unique challenges for parts management. The age of some aircraft being serviced is 30 to 50 years, and the more an aircraft ages, the more service parts are required to keep up with replacement. This adds to the already significant volume and complexity of data for any given model. The B-52 Stratofortress, for example, was last built in 1962. As individual parts have changed and progressed with technology,

a part from one aircraft may no longer match the same part for a different aircraft—adding a layer of complexity in the ability to replace the part with the precise fit and function needed to ensure prompt return to flight.

Complicating matters, not all of Boeing's internal business units used the same software for service parts management, creating siloed solutions to service problems without an enterprise-wide perspective. Given this, BGS recognized a clear opportunity to improve operational excellence by standardizing one service parts management technology calibrated to maximize equipment availability for all of BGS's customers. To do so, they would need to find a flexible enterprise service parts management solution—one that could set the pace of innovation with a firm foundation in advanced data science, helping to ensure that all business units move forward together with a consistent enterprise standard.



## With precision focus, Servigistics becomes a frontrunner for service parts optimization

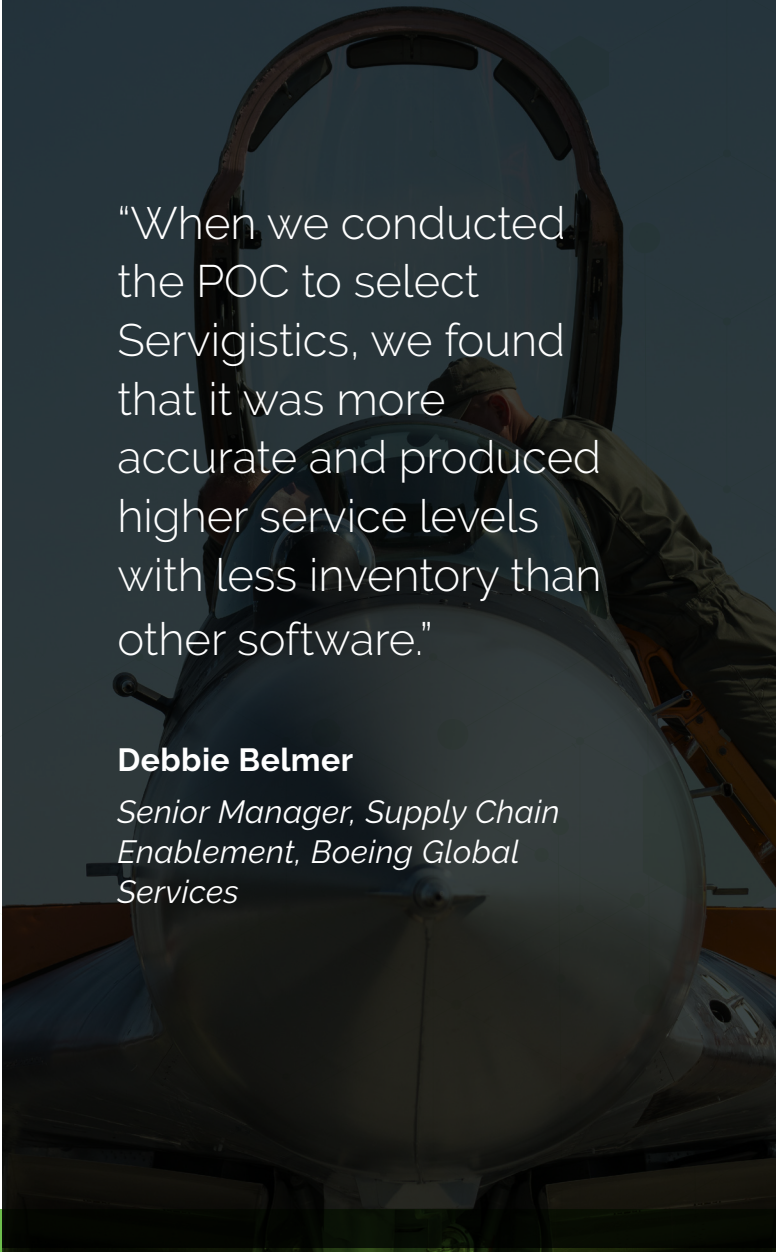
Managing an inventory as diverse and sizeable as BGS's was no small task, nor was the process of creating a roadmap for implementing a new, enterprise-wide solution. "Business units have different challenges, so getting to a standard offering is quite difficult," says Scott McKelvey, Program Manager at BGS. Calling on longtime consulting partner Capgemini for additional guidance, Boeing set out to conduct a deep analysis to determine the optimal solution for managing their complex aftermarket service supply chain logistics.

One option they considered was Servigistics, a sophisticated, purpose-built enterprise service parts optimization and decision support tool. It offered the potential to deliver the highest service levels with the lowest inventory cost, which would allow BGS to meet their customer commitments without overspending on unnecessary inventory—a solution that looked promising.

Knowing they needed to determine whether a single technology could be flexible enough to support both commercial air and defense needs, BGS and Capgemini set up a proof of concept (POC) to test the capabilities of available technologies.

During the rigorous testing, they examined several service planning and inventory optimization software offerings. Servigistics delivered the most persuasive test results with accurate demand forecasts and highly sophisticated inventory optimization. "When we conducted the POC to select Servigistics, we found that it was more accurate and produced higher service levels with less inventory than other software," says Belmer.

"Better yet, it was the only solution flexible enough to satisfy the needs of defense and commercial sides of the business." With confidence in the POC results, the team moved forward with Servigistics as the chosen solution—and with operational improvements immediately evident, there's no doubt it was the right choice. "Each service contract in which we implemented Servigistics immediately showed the inventory planning improvements possible," adds McKelvey.



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**Debbie Belmer**

*Senior Manager, Supply Chain Enablement, Boeing Global Services*

## BGS and Capgemini have deep collaborative roots

When BGS teamed up with Capgemini on the service parts management project, it was a natural fit, with nearly a decade of collaborative projects under their belts. One of their first projects, an initiative they dubbed the “12 Week SCM Assessment,” laid the groundwork for success by establishing the change management and strategic planning best practices needed to eventually choose Servigistics as their preferred inventory planning solution.

Every day for 12 weeks, supply chain experts from each of BGS's five major cross-country government sites came together with the goal of setting benchmarks and creating a blueprint for the government portion of aftermarket services. Through a detailed examination of people, processes, and tools—and how to instill more efficiencies in each—the team showed that a detailed, strategic approach to supply chain and aftermarket services can create significant value gains enterprise-wide. Taking a “two-in-a-box” approach with leads from BGS and Capgemini, they've consistently used this framework moving forward to assess organization structure, core team duties, operations planning, and new and legacy tools.

For BGS, the results have been well worth the investment. “Capgemini offers something different than other consultants I have worked with, something better as far as the people and how they interact with us,” says McKelvey. “It's about how they do the job they're tasked with,” he continues. “Having that two-in-a-box concept and pulling together those leads to share the burden—that's why this project has sustained.”

### A longstanding partnership with Capgemini creates new opportunity for added value

Now that Servigistics is in place, BGS can make better decisions for inventory investments based on confidence in forecasts. They're also poised to increase their available service level with the same or reduced inventory, a result that could benefit both their customers and BGS's bottom line.

However, a supply chain challenge that remained was that BGS handled contract fulfillment differently from site to site. With contract terms catering to each customer, there was a lack of consistency in data sets among different contracts and across each service site, adding complexity in an already challenging data environment.


To address this, they called upon their demand and supply planning work group formed

from the "12 Week SCM Assessment" project with Capgemini. This team would help begin implementing a Planning Data Layer (PDL) to better leverage Servigistics. PDL is a critical component of an enterprise data strategy, enabling a centralized source to collect and standardize different customer, partner, and business unit data. "One of our goals with the planning data layer is to make it robust to the variety of data inputs upstream so that supply chain planning decisions can be supported with less customization downstream," explains McKelvey. As high-quality data is paramount to improving value across the supply chain, implementing PDL will help Servigistics leverage data and forecast more accurately. What's more, it will help the team consolidate legacy tools and systems, ultimately reducing costs and accelerating overall maintenance times, not to mention improving customer satisfaction.

## **BGS and its partners are building the digital thread**

Adding PDL is just one example of how BGS is building a digital thread with an integrated flow of data that delivers the right information to the right place, at the right time—enabling improved communication and collaboration among sites and across the enterprise. Moving forward, they hope to have their sales, inventory, and operations planning (SI&OP) processes documented and running through PDL and utilizing data from Servigistics—and now even more business units within Boeing are showing interest in implementing this tool suite to support their business goals.

As they progress, BGS is exploring other resources and tools to realize even more long-term potential from their digital thread. One example is Servigistics' Performance Analytics



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**Scott McKelvey**

*Program Manager, Boeing Global Services*



"Servigistics is mission-critical to our global operations, and our partnership with Capgemini is irreplaceable. Together, Boeing takes full advantage of innovative capabilities and unmatched expertise that maximizes our operational excellence."

**Debbie Belmer**

*Senior Manager, Supply Chain Enablement,  
Boeing Global Services*

and Intelligence (PAI), a powerful blend of artificial intelligence, machine learning, and big data analysis. "There are so many ways to capitalize on these advanced technology trends," says Belmer. "But we're eager to expand our data analytics and explore how we can work with partners like PTC and Capgemini to achieve even greater value across all aspects of the business."

One of the most significant takeaways from the Servigistics implementation is how the power

of partnership elevated BGS's ability to solve problems and achieve value. With the support of both PTC and Capgemini, the project is still paving the way for future success. "Servigistics is mission-critical to our global operations, and our partnership with Capgemini is irreplaceable," says Belmer. "Together, Boeing takes full advantage of innovative capabilities and unmatched expertise that maximizes our operational excellence." With a partnership this deep in the making, there are truly countless opportunities on the horizon.

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