

Defense Logistics Agency: Using Minitab to Reduce the Prices of Spare Parts



The Defense Logistics Agency, headquartered in Fort Belvoir, Va., relied on Minitab Statistical Software to reduce the prices they were paying for spare parts.

KEY FACTS

ORGANIZATION

U.S. Defense Logistics Agency (DLA)

OVERVIEW

- Headquartered in Fort Belvoir, Va.
- 27,000 civilian and military employees
- Operates in 48 states and 28 countries
- Manages 26 distribution depots worldwide

QUALITY CHALLENGE

Minimize the price of spare parts and validate the one-pass pricing process

PRODUCTS USED

Minitab® Statistical Software

RESULTS

- Reduced prices of spare parts by 9.4%, saving \$9.5 million
- Projected savings of \$3.16 million per year
- Significantly shortened the one-pass pricing process
- Saved \$3.2 million after cancelling a shipment of over-procured parts

As America's combat logistics support agency, the U.S. Defense Logistics Agency (DLA) provides essential supplies and services to America's military stationed worldwide. Because the DLA is responsible for nearly 100% of the necessary food, fuel, medical supplies, and equipment U.S. forces need to operate, high quality standards for its products and processes are vital. Equipment supplied by the DLA includes spare parts needed for the repairs of military vehicles and tools. To help keep the costs of parts low, the agency worked with Honeywell in June 2000 to negotiate a twelve-year pricing contract that included predetermined, escalated-for-inflation prices. But by 2008, the DLA wondered if the contract's terms for pricing were still reasonable. The DLA formed a multi-functional team of Lean Six Sigma (LSS) practitioners from its own organization, the U.S. Department of Defense, and Honeywell to investigate and ensure the fair pricing of spare parts. When the time came to analyze their data, the team relied on Minitab Statistical Software.

The Challenge

The DLA contract with Honeywell included locked-in prices for 2,826 spare parts. The contract was negotiated using the "one-pass" pricing method—a method designed to prevent Honeywell from realizing neither economic benefit nor loss during the contract period. Since the contract did not include provisions to reevaluate pricing, the DLA became concerned that prearranged prices were higher than actual cost increases due to inflation.

The agency needed to determine the validity of the one-pass pricing process and if prices over the contract term had increased in line with inflation. Analyzing several years' worth of data about the pricing of spare parts was a challenging task, but Minitab Statistical Software was designed expressly for making statistical analyses easy to execute—and understand.

Learn how Minitab software can help you improve quality at www.minitab.com.

How Minitab Helped

The LSS project team defined a metric that classified part prices as “acceptable” if they remained within a band of plus or minus 15% from the original contract price. Prices that fluctuated outside of this band were classified as “defects.”

With this metric defined, the team used Minitab to analyze defective price increases and determine if those price increases were contributing to profits for Honeywell that exceeded the terms of the contract. Measuring the defects revealed that only 40% of parts were within the acceptable pricing band and 60% were outside of the band and experienced more than a 15% increase or decrease in price. Minitab graphs helped the team conclude that part prices had increased more than 21% since the initial contract price.

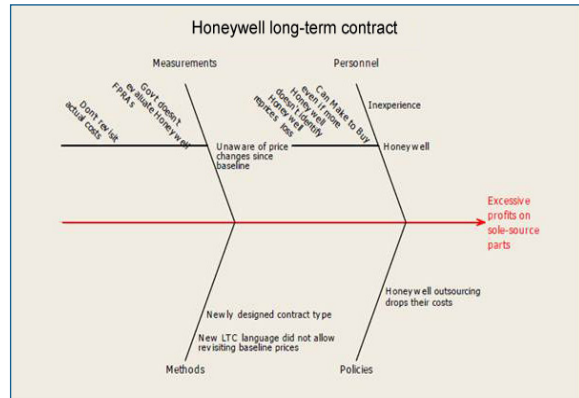
When it came time to brainstorm potential causes and possible solutions for decreasing part prices, the team relied on Minitab’s cause-and-effect diagrams to easily organize and clearly display all of their brainstorming information.

Results

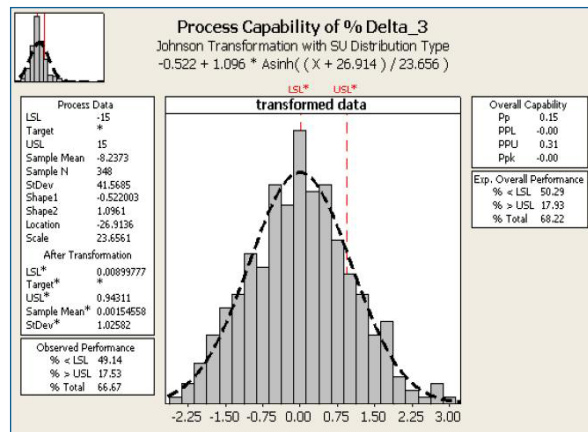
Their brainstorming session led the team to conclude that a re-pricing mechanism was needed within the contract at the three-to-five year mark in order to effectively control pricing. After implementing the re-pricing strategy, the team used Minitab to create graphical summaries of the re-priced parts data that clearly displayed the effect of the initiative. A new measure of total defects revealed that 82% of spare parts were now within the acceptable pricing band, and only 17.5% of parts included more than a 15% increase in price.

Minitab’s powerful capability analysis provided another graphical display of the effectiveness of re-pricing. This analysis showed that the majority of part prices were reduced, with 49% of parts having a significant pricing reduction of more than 15%.

In all, the total price of spare parts was reduced by 9.4%, which yielded a savings of \$9.5 million for the DLA. Further, the team was able to identify another \$3.2 million in savings after cancelling a shipment of over-procured parts.



Minitab cause-and-effect diagrams allowed the DLA Lean Six Sigma team to organize and clearly display all of their brainstorming information.



Minitab’s powerful process capability analysis helped the team illustrate the results of their re-pricing plan for spare parts.

Research discussed in this case study was originally published in “Report No. D-2011-042: Lean Six Sigma Project – Defense Logistics Agency/ Honeywell Long-Term Contract Model Using One-Pass Pricing for Sole-Source Spare Parts,” United States Department of Defense Inspector General, February 18, 2011.



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